Better Homes and Gardens®

WOOD

THE MAGAZINE FOR HOME WOODWORKERS

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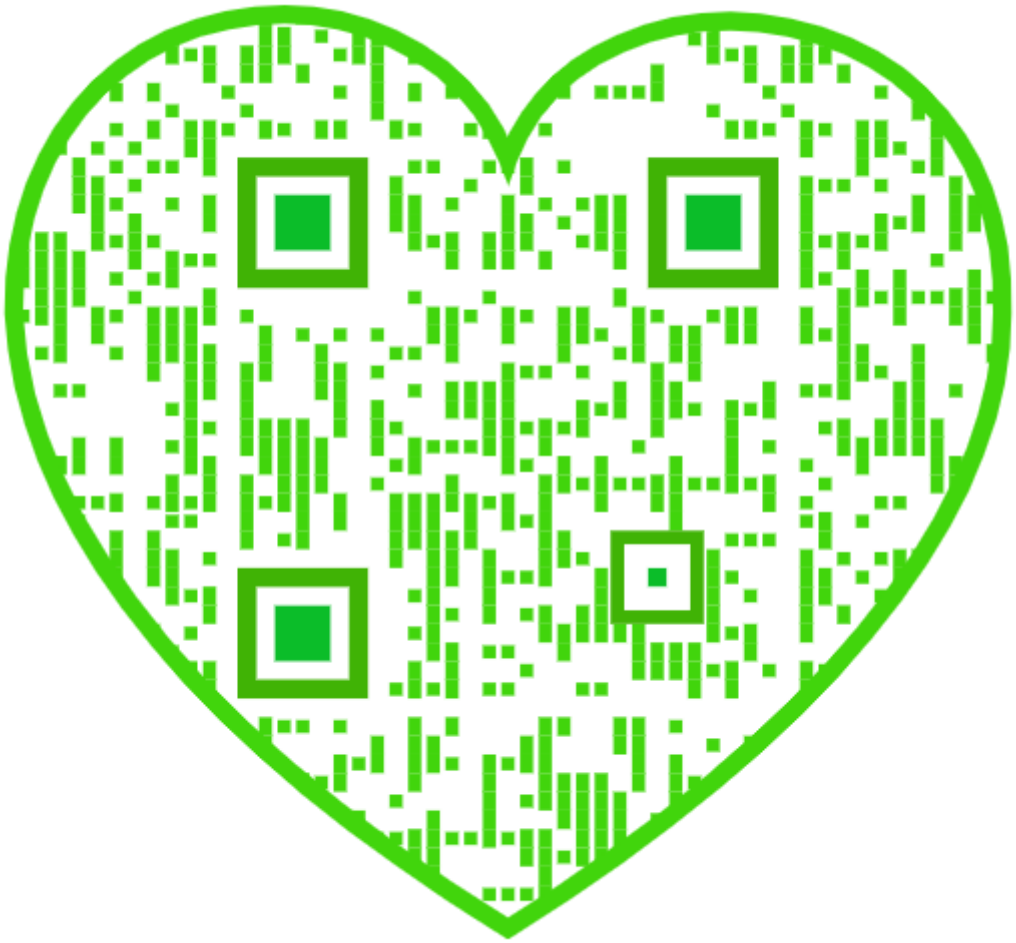

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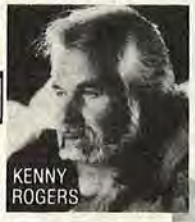

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Better Homes and Gardens®

WOOD

Wood grain in cover logo type this issue is beech

FEBRUARY 1987 **ISSUE NO. 15**

WOOD PROFILE

YELLOW POPLAR: WILLING TO WORK, PLEASANT TO PAINT, AND YOU CAN'T BEAT THE PRICE 35

Turned, carved, molded, painted — this wood can be found in everything from caskets to pianos.

CRAFTSMAN CLOSE-UP

RUSTIC REDWOOD SIGNS 36

Ever try routing a sign free-hand? Come on, give it a try — it's not that hard. Dave Jordan shares secrets gleaned from 11 years of sign cutting. We've also included a first-time project to start you out.

SHOP-TESTED TECHNIQUES

CUTTING CURVES — AND MUCH MORE 40

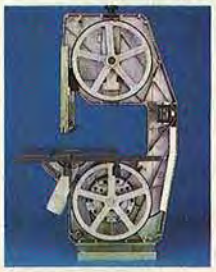
Curves, yes — but did you know that cutting circles, arcs, chamfers, and duplicates can be done just as easily on the band saw? Our 7 shop-tested techniques show you how to do them.

WE KNOW YOU CAN BUILD THE BLOCK...NOW, CAN YOU SOLVE THE PUZZLE? 46

Challenge your friends to see how fast they can piece this band-sawn block puzzle back together again.

THE 'BIG APPLE' BANK 48

Colorful and inviting — here's a bank that youngsters will shine up to in a hurry. This easy-to-make project not only encourages thrift, it serves as a cheery-looking child's room accessory. Bet you don't build just one!



TOOL BUYMANSHIP

BAND SAWS: THERE'S ONE OUT THERE FOR YOU 50

If there's a band saw on your wish list, you'll want to know about throat capacity, cutting height, blade guards, and other important features. Our tool experts talk about these and more.

ROUTER STRAIGHTEDGE: IT MAKES DADOES AND EDGE-JOINTING A SNAP 56

Simple to make, easy to use, and best of all, it takes up hardly any room in the shop. So don't try routing another blind dado without it.

MAKE 'EM IN A DASH SHAKERS 60

Spice up someone's table setting with these palm-sized mahogany and walnut shakers. The special tenon technique makes it easy to turn them on a lathe.

WANT TO SELL YOUR WORK? FOR FUN AND PROFIT, TRY A CRAFTS FAIR 62

Hot, booming, the rage — all describe crafts fairs. One, or several, may be the perfect place to sell your ware. And, here's help to get started!

AIR-DRYING GREEN WOOD 64

Many woodworkers take great pride in building with wood they've seasoned themselves. So can you — and save 50 percent or more, for your efforts. Here's where you can find out more about it.

CRAFT A COUNTRY CLASSIC

QUILT RACK 68

Show off a treasured piece of handiwork or valued heirloom on this attractive oak quilt rack.

KITCHEN CANISTER & BRASS SCOOP 72

Make one, or half-a-dozen — we show you how, step-by-step.

SPICE CABINET 76

Charming oak, porcelain knobs, and antique glass — a winning combination.

PAPER TOWEL HOLDER 80

Its country charm will earn this holder a place on many a kitchen wall.

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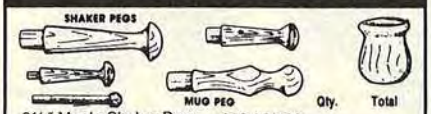
WOODWORKS



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February 1987 • Vol. 4, No. 1 • Issue No. 15

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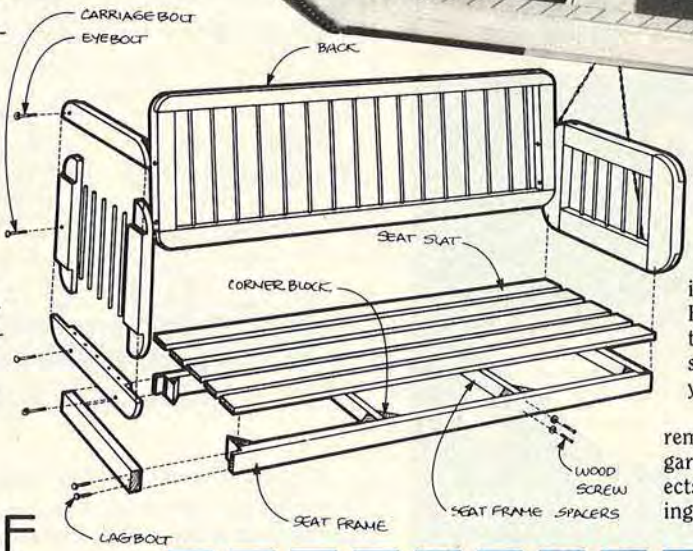

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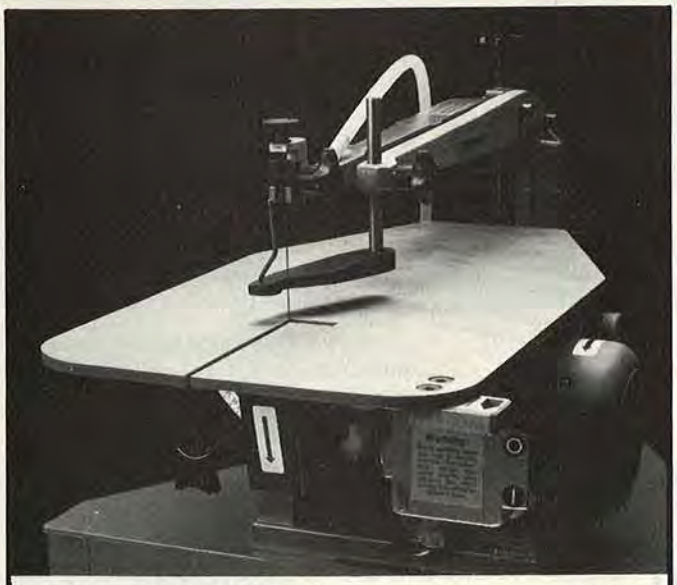

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TALKING BACK

Print this article

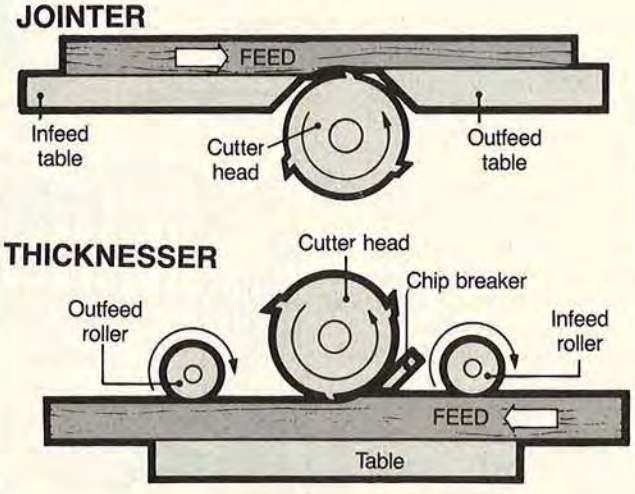
We welcome comments, criticisms, suggestions ...even an occasional compliment. The volume of mail we receive makes it impossible to answer every letter, but we promise to do our level best. Send your correspondence to: Letters Editor, WOOD Magazine, Locust at 17th, Des Moines, IA 50336.

NEVER A THICKNESSING MACHINE BE

Of all things, a thicknessing machine and an article about thicknessers (Oct. 1986, pgs. 56-61). Why not call it a planer — a term that any woodworking person would understand? I grew up in a wood millwork operation — it was always a planer — never a thicknessing machine.

C.F. VanBuskerk, New Castle, Ind.

Mr. VanBuskerk, you raise a valid question. But rest assured our tool specialists wrestled with these names a long time before deciding to call them thicknessers. Their intent was to establish a definitive name and to eliminate some of the confusion and misunderstanding that exists.



While certain machines perform only one function, namely planing (or thicknessing) wood to a particular dimension, some of the newer machines now being sold are able to do more than just this one operation. We believe that "thicknesser" is a more encompassing term to use.

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Some folks also confuse jointers and thicknessers. As the above illustration shows, the cutter heads on a jointer operate below the feed table, while on a thicknesser, the cutter head operates above the feed table. Thicknessers also have pressure rollers or bars that force the wood against the table.

Continued on page 10

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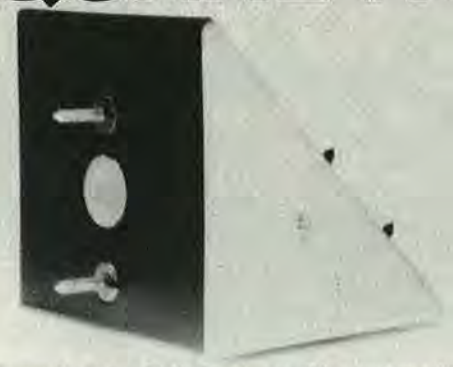

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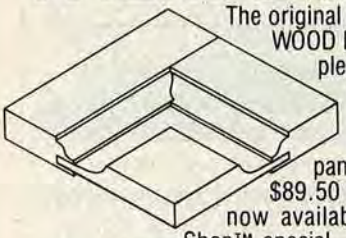

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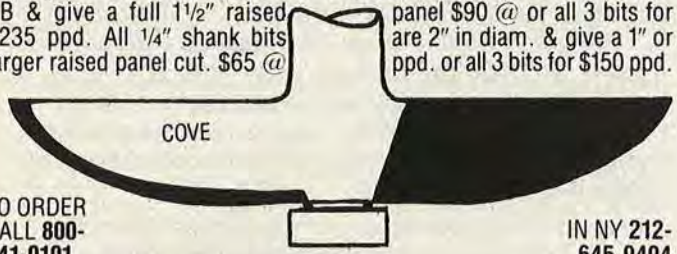

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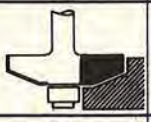	#15	RAISED PANEL	20° Angle	1-5/8"	1/2"	25.00
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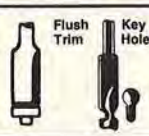	#13	1/2" FLUSH TRIM		1/2"	1"	8.50
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TALKING BACK

Continued from page 8

KEEP SAFETY FOREMOST IN MIND!

In the October issue of WOOD, a reader suggested using shampoo bottles to store tung oil. Please remind others that transferring such materials from their original containers removes critically important safety considerations designed into the package and label. Each year thousands of children are poisoned by chemicals they find in their home. Proper containers are the first step in preventing such accidents. Having label information, such as ingredients and first-aid instructions, can be very critical in treating a poisoning victim.

Richard Drew, Durham, N.C.

Thanks for reminding us about the safety aspects of that suggestion, Richard. We work hard to prevent accidents with our power tools. We also need to safeguard against accidents with the hazardous materials used in the shop. It might be a good idea if we all double-check our storage facility. Although it may be safe enough for us, we should realize there may be visitors, particularly exploring grandkids and others, who are not aware of the potential hazards. A surprising number of products commonly used in a shop have potentially hazardous ingredients. To determine which ones, check the labels. Look for key signal words such as "acid", "danger", and "poison", that warn of any toxic contents. Also read the directions for storing and handling — these sometimes tip you off as to hazards a product presents. If you're still in doubt about a product, ask your dealer.

WHEN TO STICKER DRY WOOD

Regarding your reply to the question on how to separate stacked boards on page 90 of the June, 1986 issue: The U.S. Department of Agriculture's Forest Products Utilization Technical Report #6 recommends stickers be placed directly above each other. If not, sags will develop in the boards where weight bears on unsupported areas.

Robert E. Jacques, Carlisle, Pa.

Robert, your letter prompted us to call the experts at the U.S. Forest Products Laboratory in Madison, Wis. They told us you can safely stack dried lumber without stickers as long as it stays dry. In fact, many commercial factories solid-stack dry wood, without stickers, when they know it will be used within a reasonably short time. And, many woodworkers routinely solid-stack wood in their shops.

But green lumber must be stickered, and as you point out, with the stickers placed directly above each other to eliminate any possibilities of the boards warping. For other details on drying lumber, read the article, Air-Drying Green Wood, *starting on page 64 in this issue.*

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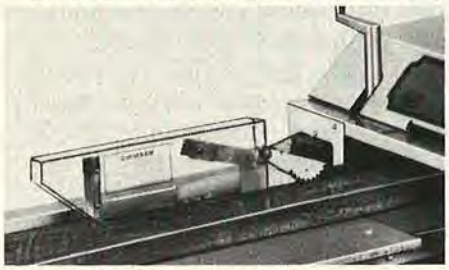

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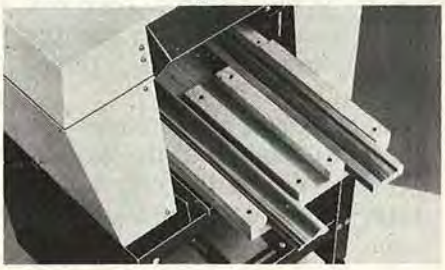

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In woodworking, as in life, no one knows it all. But through experience, we all discover — or stumble onto — better, safer, faster, or easier ways to do things. When we devise interesting tips or techniques, we'll share them with you in this column. And when you send us your favorites, we'll pay you $25 for each submission we publish. No shop tips can be returned. Mail your tips to:

Shop Tips
Better Homes and Gardens®
***WOOD* Magazine**
Locust at 17th
Des Moines, IA 50336

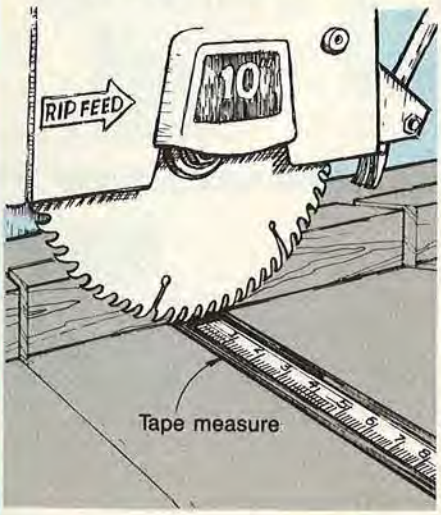
BORROWED FROM THE FAMILY SEWING KIT

Ripping various widths of material on a radial arm saw requires a lot of setup time. How can you speed things up?

TIP: With the radial arm blade set for ripping, turn on the saw, lower the blade, and cut a 1/16"-deep groove in the tabletop. Then pull the blade slowly toward and then away from you to create a dished-out groove.

Glue a paper or cloth tape measure to the bottom of the groove. When you're ready to rip, set the blade so that it just clears the scale. Now you don't need to raise and lower the blade each time you set up to rip a different width of material.

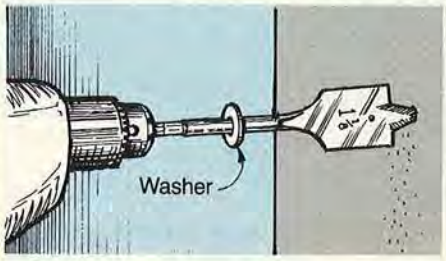
— Fred Schwend, Mira Loma, Calif.



WHOOPS! OUR MISTAKE

We found an error in one of the shop tips on page 14 of our last issue (December, 1986). The tip, from Robert A. Grace, St. Joseph, Mich., shows how you can tell if you're drilling level with spade bits. You slip a washer over the drill bit shaft. If the washer neither climbs up nor walks down the shaft, you are holding the bit level, as shown in the drawing *below*. In the last issue, we ran the drawing *sideways*, with the bit pointing *down*. If you saw this drawing, you might have wondered how we made the washer defy the law of gravity! The drawing *below* should clarify things.

— From the *WOOD* shop

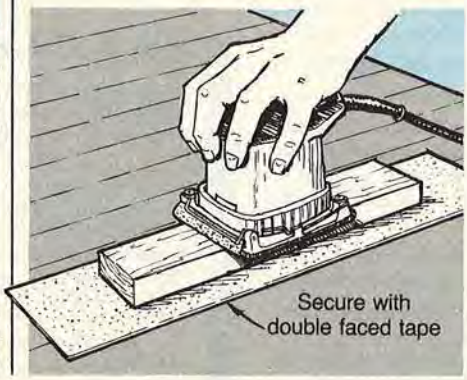


SLIP-SLIDING AWAY NO MORE

Small workpieces can be hard to clamp or fasten to the workbench for sanding or planing.

TIP: Use double-faced tape to secure strips of used sanding belts — the coarser, the better — to your workbench top. The sandpaper helps keep pieces of wood stationary while you safely sand or plane them. This trick works especially well if you need both hands to operate the tool.

— From the *WOOD* shop

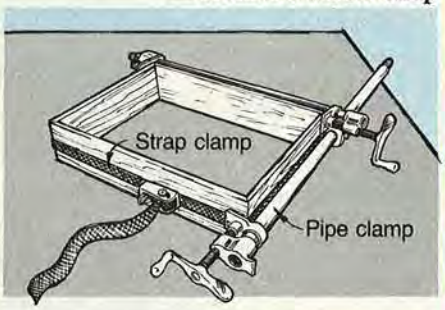


DO THE CLAMPING TWO-STEP

Unless you have help, struggling with pipe clamps to clamp a mitered box or frame for glueing can be tough.

TIP: Call a strap clamp to the rescue. Glue and assemble the project at the workbench. First secure it with a strap clamp and then beef up the clamping process with pipe clamps, as shown.

— From the *WOOD* shop

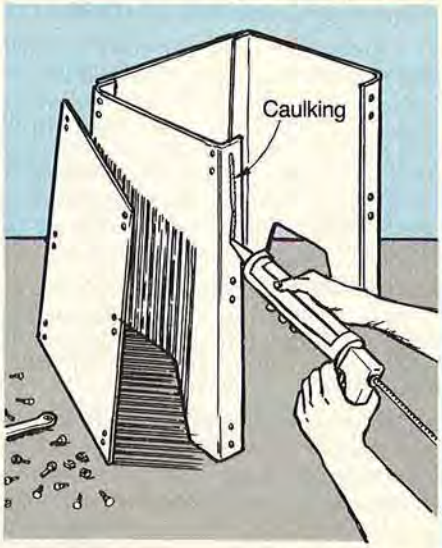


THE ELIMINATOR

Vibrating metal power-tool bases, stands, and cabinets create a lot of noise pollution in the shop.

TIP: Here's how you can cut out a lot of that noise permanently in short order. Disassemble the stand or base and apply a bead of a good, low-shrinkage construction adhesive — Franklin's Premium 5661 is one brand — anywhere metal parts touch. When it's reassembled, you should notice quite a substantial reduction in noise when the machine runs.

— Robert M. Vaughan, Roanoke, Va.



Continued on page 20

RYOBI TOOLS

		List	Sale
S500A	3x5½ Finish Sander	70	41
SU6200	Finishing Sand. ½ Sheet	142	88
B7075	3x21" dustless Belt Sand.	179	116
B7100	3x24" dustless belt Sand.	208	140
B7200A	4x24" dustless Belt Sand.	269	165
D100VR	3/8" VSR 0-1200 rpm drill	91	49
W640	7¼" 13 amp circular saw	158	99
W740	8¼" 13 amp circular saw	171	109
JS60	Jig Saw-Single Speed	172	99
JSE60	Jig Saw-electronic v/speed	198	123
R150	1 H.P. Plunge Router	138	86
R330	2 H.P. Router	220	138
R500	3 H.P. Router	265	163
E3800	Drywall screwdriver 0-4000	126	79
L120U	3⅝" Planer	142	89
BD1020R	3/8" 2-spd Cordless Drill w/free holster-Xtra special buy	148	95
TS251U	10" Mitre Box	300	169
SG1150C	4½" H.D. Mini-Grinder	99	59

YOUR ATTENTION PLEASE!

All Above RYOBI TOOL Prices

Take Additional 10% OFF Sale Prices

MILWAUKEE TOOLS

		List	Sale
0224-1	3/8 drill 4.5A magnum	173	109
0234-1	½ drill 4.5A magnum	173	112
0244-1	½ drill 4.5A magnum	173	115
0222-1	3/8 drill 3.3A 0-100 rpm	159	99
0228-1	3/8 drill 3.3A-0-1000 rpm	139	92
0375-1	3/8 close quarter drill — NEW — 3.5 amp	191	118
0210-1	3/8 cordless drill — NEW — 2 speed	189	95
6539-1	cordless screwdriver — NEW — 190 RPM	99	59
1007-1	½" drill 4.5A D-Hdle	217	145
1107-1	½" drill 4.5A D-Hdle	222	145
3300-1	magnum rt angle drive kit	271	170
3102-1	Plmbrs rt angle drill kit	287	180
1676-1	HD Hole Hawg w/case 2 sp	363	235
5395	3/8 sgle sp hammer drill kt	203	150
5397	3/8 var sp hammer drill kit	208	155
5371-1	HD mag. hammer drill ½"	313	207
5373	HD mag. ham. drill 3/8"	262	175
6511	2 speed Sawzall w/case	197	122
6226	port band saw 2 sp w/case	416	280
6234	TSC band saw port w/case	416	280
6405	8¼" circ. saw 13 amp	191	127
6460	10¼" " 15 amp w/case	380	245
6165	12" Chop saw 15 amp 4200 R.P.M.	311	189
6255	v/sp Jig Saw 3.8 amp	217	140
6245	sgle sp Jig Saw 3.8 amp	191	125
6012	⅓ sheet HD Orb. sander	173	110
6014	½ sheet HD orb. sander	184	112
5660	1½ HP router 10 amp	289	175
5680	2 HP router 12 amp	342	220

DRYWALL SHOOTERS

6753-1	3.5 amp 0-4000 rpm new	125	79
6747-1	4.5 amp 2500 rpm	157	100
6750-1	4.5 amp 0-4000 rpm	141	90

NEW FROM RYOBI

MODEL AP-10 — 10" Surface Planer

WEIGHS ONLY 58 LBS.

LIST 659.00 — SALE 375.00

MILWAUKEE Super Specials!

*** * BRAND NEW * ***

Model 0212-1 Cordless Variable Speed 3/8" Drill

LIST. . .209.00 SALE. . .125.00

Model 6145 — 4 1/2" Sander-Grinder

LIST. . .149.00 SPECIAL SALE. . .85.00

Go Cordless with MILWAUKEE

#6305 — 6¼" Cordless Circular Saw

12 volt — 1 Hour Charge

Cuts (80) 2x4's (Pine)

List Price 229.00 ★ SALE PRICE 119.00

FREUD SAW BLADES

Univ. Bore — Professional Series

CARBIDE TIPPED SAWBLADES

Item No.	Description	Diam.	Teeth	List	Sale
PS203	Gen'l Purp.	7½"	24	27.24	17.50
PS303	Fine cutting	7¼"	40	32.97	20.50

⅝" Bore — Industrial Grade

CARBIDE TIPPED SAWBLADES

Item No.	Description	Diam.	Teeth	List	Sale
LU72M010	Gen-l Purp.	10"	40	68.58	34
LU81M010	Gen-l Purp.	10"	40	69.30	35
LU73M010	Cut-Off	10"	60	79.65	36
LU82M010	Cut-Off	10"	60	86.40	44
LU84M010	Combination	10"	40	70.99	36
LU84M011	Combination	10"	50	74.51	37
LU85M010	Super Cut-Off	10"	80	110.88	62
LM72M010	Ripping	10"	24	64.85	34
DS 306	6" Dado			139.00	92
DS 308	8" Dado			170.00	105
TR 100	3 blades & Dado set			399.00	255

MAKITA CORDLESS FESTIVAL OF VALUES

Model		List	Sale
4300DW	Jig Saw	158	99
5081DW	3⅜" Saw Kit	174	95
5600DW	6¼" Circular Saw	224	125
9035DW	Finishing Sander	128	73
6010DWK	3/8" Cordless Drill Kit	152	88
6010SDW	3/8" Cordless Drill	84	45
8400DW	3/8" Hammer Drill	188	105
DA3000DW	3/8" Angle Drill	176	98
6010DL	3/8" Drill w/Flashlight	162	89
6012HDW	3/8" 2 spd Driver Drill w/Bat & Metal Case	178	98
DK1002	3/8" Drill w/Flursnt Lt	164	90
6710DW	Cordless Screwdrvr Kit	148	84

LEIGH DOVETAIL JIGS

Model	List	Sale
TD514	149	125
TD514L	219	195
D1258-12	299	245
D1258-24	359	275

MAKITA BRAND NEW X-TRA SPECIAL

Model		List	Sale
5007NBA	7¼"Saw w/Elec. Brake	186	115
5008NBA	8¼" Saw w/Elec. Brake	212	130

MAKITA TOOLS

		List	Sale
BO4510	Sander	86	43
9900B	3"x 21" belt sander	218	119
9924B	3"x 24" belt sander	208	130
9924DB	3"x 24" b/sand. w/bag	234	130
9035	⅓ sheet finish sander	88	48
9045B	½ sheet finish sander	184	90
9045N	¼ sht fin. sand. w/bag	184	105
4200N	4⅜ circ. saw 7.5 amp	168	93
5008NB	8¼ circ. saw 13 amp	198	105
5201NA	10¼ circ. saw 12 amp	398	215
4300BV	v/sp jig saw 3.5 amp	218	120
4301BV	orb v/sp jig saw 3.5 amp	230	125
JR3000WL	2 sp recip saw w/case	188	120
JR3000V	vs recip saw w/case	198	120

*** * * MAKITA TOOLS * * ***

SPECIAL PROMOTION

LS1000	New 10" Mitre Box	368	198
792210-7A	Carbide Bld for above	49	31
9820-2	Blade Sharpener	268	159
741074-9	60 (coarse) Grdg Whl	33	23
741070-7	1000 (med) Grdg Whl	31	22
741071-5	6000 (fine) Grdg Whl	43	30
1900BW	3¼" planer w/case	178	92
1100HD	3¼" planer w/case	312	160
3608BK	¾ hp router w/case	132	85
3601B	1⅜ hp router	198	115
3700B	½ hp trimmer 28,000 rpm	148	82
BO4530	6" Round Sander	90	48
DA3000	3/8" angle drill	188	105
DP4700	½ v/sp w/rev" 4.8 amp	172	92
HP1030W	3/8 v.s.r. hammer drill w/case	158	98
6300LR	½" angle drill w/rev	268	152
8419BB-2W	½" s sp. hammer drill w/case	268	150
GV5000	Disc Sander	98	53
6800DB	2500 rpm 3.5 amp	134	79
6800DBV	0-2500 rpm 3.5 amp	144	89
6801DB	4000 rpm 3.5 amp	134	79
6801DBV	0-4000 rpm 3.5	144	89
2030n	12" planer/jointer	2360	1475
2040	15⅝" planer	1930	1195
1805B	6⅛" planer kit w/case	466	265
JV1600	var. speed jig saw	162	89
JV2000	var. speed orb. jig saw	188	100
5005BA	5½" circular saw 8 amp. with brake	176	98
9207SPC	7" var/speed electronic sander/polisher	238	130
9303BH	4½" sander-grinder kit	146	95
4014NV	var/speed blower	138	79

▲▲ DELTA — BRAND NEW

Model		List	Sale
34-080	10" Miter Box w/rotary table	279	179

○○○ ***Repeat of a Sellout*** ○○○

DELTA — SUPER SPECIAL

40-601	18" Electronic v/sp scroll saw — complete	1117	679

WE NOW HAVE A COMPLETE STOCK OF BOSCH CARBIDE TIPPED SHAPER CUTTERS

ALL SALE PRICES AT 40% OFF LIST.

buying from Seven Corners Hdw. . . . is a good Rule to follow.

Model	STANLEY	List	Sale
33-116	PL-316 ¾" x16' Rule	15.95	7.50
33-320	PL-320 ¾" x 20C Rule	16.95	7.95
33-425	PL-425 1" x 25' Rule	18.95	8.95
33-430	PL-430 1" x 30' Rule	20.95	9.95

1987 TOOL CATALOG AVAILABLE

Call Toll-Free 1-800-328-0457 — In Minnesota Call (612) 224-4859

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SAW-ATHON by PORTER CABLE

#314	4½" Trim Saw	
List 180		SALE 109
#346-1	6½" Top Hdle	
List 161		SALE 100
#617	7¼" Push Hdle	
List 166		SALE 96
#587	7¼" Speedtronic	
List 199		SALE 125
#315-1	7¼" Top Hdle	
List 166		SALE 96
#368-1	8¼" Top Hdle	
List 176		SALE 110

BELT SANDERS by PORTER CABLE

#363 — 4" x 24" w/o Bag

List - 280 Sale - 185

#362 — 4" x 24" w/Bag

List - 295 Sale - 198

#503 — 3" x 24" w/Bag

List - 510 Sale - 350

▲▲ DELTA

#34-410 — 10"

CONTRACTORS SAW w/Stand & 1½ H.P. Motor

SPECIAL PRICE 679.00

FACTORY REBATE 100.00

579.00

FREE DELIVERY TO 48 STATES

TOOLS ON SALE™

AMERICA'S LOWEST PRICED TOOLS

★ PLUS — FREE FREIGHT ★

ON EVERY ITEM

SUPER CORDLESS SPECIALS from BLACK & DECKER

Model	DRILL KITS	List	Sale
1930	3/8" rev/hi speed	165	110
1950	3/8" High Torque	165	110
5930	Reversible Hammer	179	120
1970	3/8 rev/hi torque screwdriver	179	120
1980	Rev/adj. clutch Scrudrill	179	120

BRAND NEW! SUPER SPECIALS from MILWAUKEE

0214-1	3/8" c/less drive/drill	189	109
8975	H.D. heat Gun, 11.6A Low 570°F - High 1000°F	81	49
5920	belt sander 3x24 w/o bag	315	199
5925	belt sander 3x24 w/bag	315	215
5930	belt sander 4x24 w/o bag	326	209
5935	belt sander 4x24 w/bag	348	214

PORTER-CABLE = NEW ITEMS +

Model		List	Sale
655	Drywall Driver 0-4000 Rev	115	85
367	3¼" Plane 6.5A.	170	115
5009	Mortise & Tenon Jig	50	34
351	3" x21" Belt Sander	189	125
352	3" x21" Belt Sndr w/bag	199	135
9810	Cordless Screwdrvr kit	175	115
320	Abrasibe Plane 3A.	129	91

★ ★ *ROUTER RIOT* ★ ★ by PORTER-CABLE

Model		List	Sale
100	7/7 H.P. 6.5 amp	141	98
630	1 H.P. 6.8 amp	150	100
690	1½ H.P. 8 amp	194	130
691	1½ H.P. D-Hdle 8 amp	218	145
536	1½ H.P. Speedmatic Double Handle	300	190
537	1½ H.P. Speedmatic Double Handle	315	215
520	3 H.P. Production	460	270
518	3 H.P. Micropressor 5-sp	490	345

TRIMMERS BY PORTER-CABLE

309	3.8 amp laminate trimmer	130	90
310	3.8 amp laminate trimmer	190	135
312	offset base laminate trim	205	140
319	tilt-base laminate trim	215	150

★ *X-TRA SPECIALS* ★

MAKITA TOOLS

		List	Sale
6010DL	C/less Drill w/flashlight-charger & case	174	90
DP3720	3/8 drill Rev. 0-1800 rpm	98	47
6510LVR	3/8 drill Rev. 0-1500 rpm	136	67
6013BR	½" Drill rev. 6 amp.	198	100
5402A	16" Circular Saw-12 amp	518	315
2414	14" Cut Off Saw-13 amp	308	169
3612BR	3 HP Plunge Router	318	175
9401	4x24 belt Sander w/bag	268	160

PORTER-CABLE

		List	Sale
696	H.D. Shaper Table	150	105
695	H.D. 1½ hp Router/Shaper	278	190
399	Drywall Cut-Out Unit	100	70
736	V/Speed *Speedtronic* Band Saw	450	330
7564	½" X.H.D. Drill 8 amp.	205	145

BOSCH TOOLS

		List	Sale
1581VS	Top Handle Jig Saw	225	126
1582VS	Barrel Grip Jig Saw	126	118
1604	1¾ H.P. Router	199	118
1942	Heat Gun 650°-900°	99	85
1272	3x24" Belt Sander	259	159
1272D	3x24" Belt Sander w/bag	274	169
1273	4x24" Belt Sander	274	169
1273D	4x24 Belt Sander w/bag	289	179

▲▲ DELTA

		List	Sale
34-010	Motorized Mitre-Box	231	149

★ NEW LOW PRICES ★ PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
#50	for ¾" Black Pipe	11.23	7.15	79.00
#52	for ½" Black Pipe	9.36	6.10	67.50

JORGENSEN HAND SCREWS

Model	Jaw Length	Open Cap.	List	Sale	Box of 6
#5/0	4"	2"	11.59	7.25	39.15
#4/0	5"	2½"	12.45	8.10	43.75
#3/0	6"	3"	13.36	8.50	45.95
#2/0	7"	3½"	14.36	8.95	48.35
#0	8"	4½"	15.97	9.95	53.75
#1	10"	6"	18.25	11.35	61.25
#2	12"	8½"	20.94	13.60	72.95
#3	14"	10"	26.56	16.75	91.35
#4	16"	12"	34.55	23.75	128.25

JORGENSEN BAR CLAMPS

STYLE 37 — 2½" Throat ¼" x ¾"

Model	Jaw Length	List	Sale	Lots of 6
3#3706	6"	7.88	5.50	29.70
#3712	12"	8.73	5.95	32.13
#3718	18"	9.64	6.95	37.53
#3724	24"	10.54	7.35	39.69
#3730	30"	11.76	8.25	44.55
#3736	36"	12.85	8.95	48.33

Who Has The Saws That Cut It Across The Board?

***BLACK & DECKER** of course!!!*

Model	WORM DRIVE SAWS	List	Sale
3050	6½" 12 amp - 4600 rpm	247	169
3051	7¼" 13 amp - 4300 rpm	232	149
3052	8¼" 13 amp - 4300 rpm	247	169
	SUPER SAWCATS		
3047-09	7¼" w/brake - 12.5 amp	226	149
3048-09	8¼" w/brake - 13 amp	240	155
	BUILDERS SAW CAT		
3030	7¼" 13 amp - 5800 rpm	155	100
3035	8¼" 13 amp - 5800 rpm	175	125
3034	7¼" 13 amp - 5800 rpm	162	115
3033	6½" 13 amp - 5800 rpm	162	115
	JIG SAWS		
3157-10	var/sp orb action d/hdl	174	115
3153-10	var/speed 4.5A 0-3100	158	105
3159-10	2/sp orb action barrel grip	178	120
	CUT SAW KITS		
3103	2 sp 6 amp-2400 strokes	163	100
3105	v/sp 6 amp-2300 strokes	170	110
3107	v/sp orb 6A 0-2300 strokes	183	119
4300	Drill Bit Sharpener	289	205
1321	½" drill 450 rpm 6 amp	175	115
4010	Palm Sander	80	48
4015	½ Sheet Finish Sander	160	105
	DRYWALL GUNS		
2034	v.s.r. 0-4000 rpm	121	79
2037	v.s.r. 0-4000 rpm	139	89

"Door Openers" from MAKITA

9501B	4" Grinder Kit	119	55
2708	8¼" Table Saw	348	199
5007NB	7¼" Circ. Saw	158	94

MILWAUKEE BUY OF THE YEAR

Model 6365 — 7¼" Circular Saw

List $169.00 Sale $99.00

Lots of 3 — $289.00

Brand New • PORTER CABLE

Model 7548 Top Hdle Jig Saw

LIST 199 — SALE 129.95

Model 7648 Barrel Jig Saw

LIST 199 — SALE 129.95

PORTER-CABLE

		List	Sale
9548	HD v/s bayonet saw w/case	255	169
9627	2 sp. tiger saw kit 8 amp	193	130
9629	V/sp. tiger saw kit 8 amp	204	135
505	H.D. ½ sheet finish/sander	175	100
330	spd bloc sander ¼ sheet sz	87	54
304	Professional 7" disc sander	169	120
305	Professional 7" polisher	169	120
7511	3/8" xtrahvy v/s drill 5.2 amp	164	115
7554	½" xtra hvy drill 8 amp	210	150
9652	Versa-Plane Kit	419	285
9118	Porta Plane Kit	289	190
	DRYWALL SHOOTERS		
7544	5.2 amp — 2500 rpm	158	105
7545	5.2 amp — 0-2500 rpm	158	105

AEG POWER TOOLS

Model		List	Sale
EZ 501	C/less Scrwdrvr **Brand New**	59	35
EZ 502	C/less Scrwdrvr-190 rpm	98	52
EZ 505	C/less Drill/Driver	139	79
EZ 506	C/less Electronic Drl/Drvr	159	94
EZ 581	C/less Caulk Gun var/sp	179	106
SCR1E	Drywall Screwgun 0-2000	125	74
SCR11E	Drywall Screwgun 0-4000	125	74
BE8RL	3/8" var/sp drill 3.8 amp rev	86	51
BE10RL	3/8" var/sp drill 5 amp rev	125	74
SBE401RL	3/8" Ham Drill v/sp h.d.	88	52
SE2E13RL	½" Ham Drill 2 sp h.d.	169	101
TC25E	Tech Driver v/sp 5 amp	150	89
PC70	7¼" Circular Saw 12 amp	157	93
VS130	Orb Sndr 20,000 OPM ⅓ sh	75	48
VS260	Orb Sndr 25,000 OPM ½ sh	156	88
VSS260	Orb Sndr 25,000 OPM w/bag	189	118
Hbse7SS	Belt Sander v/sp 3" x 21"	199	118
BSPE60	Jig Saw Orb v/sp 4.6 Aw/case	214	127
RSK600	Recip Orb Saw 10 amp	229	136

ROTARY HAMMERS

PHE 16RL	3.8 amp 5/8" capacity in concrete	269	175
PH 210	5.2 amp ¾" capacity in concrete	398	260
PHE 20	Same as above — except var/sp 0-750	418	270
PHD 26	6.3 amp 1" capacity in concrete	495	320
PH 38	7.5 amp 1½" capacity in concrete	549	355

All above complete with cases

SKIL TOOLS

		List	Sale
551	5½" Circ. saw 6.5A	99	73
77	7¼" Worm Saw	240	135
367	6½" Worm Saw	239	135
825	8¼" Worm Saw	270	165
807	7¼" Skilsaw 13A-Super	153	100
808	8¼" Skilsaw 13A-Super	172	110
2016-02	3/8" Cordless Drill complete W/Charger, Case & 2 batteries	199	95

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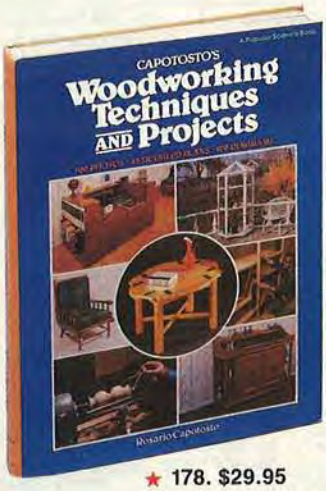

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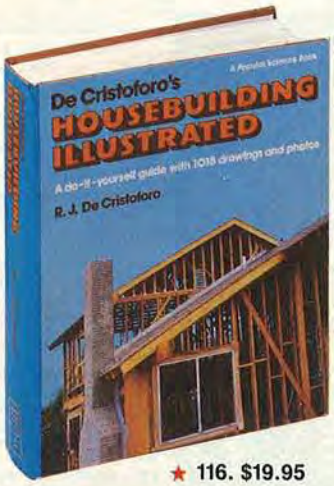

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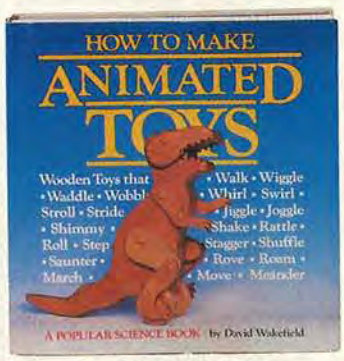

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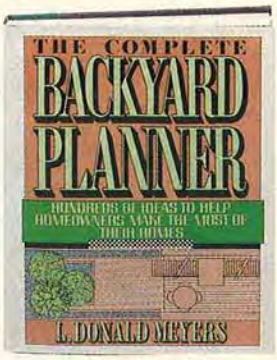

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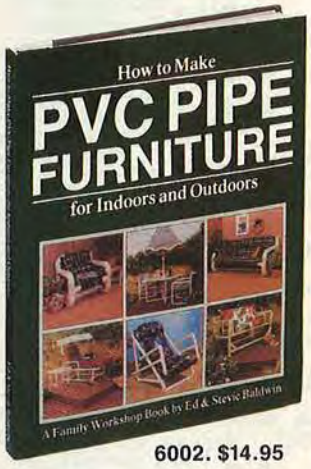

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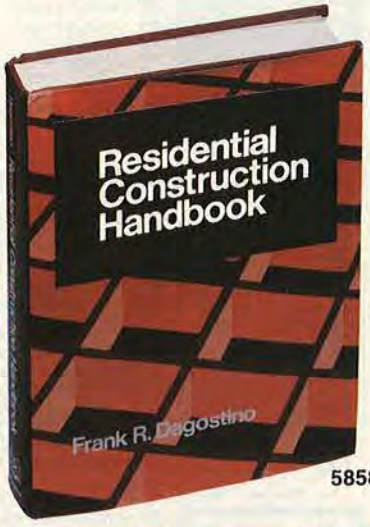

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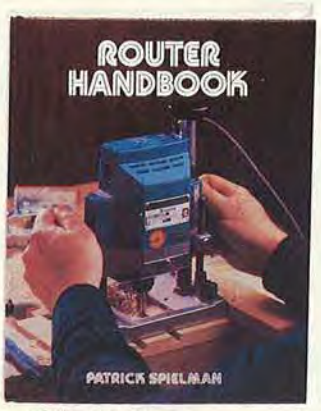

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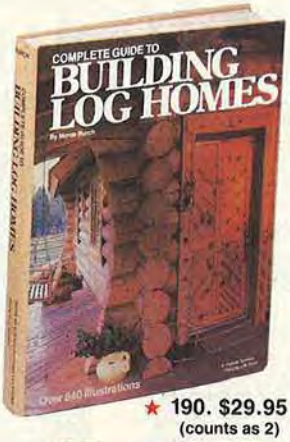

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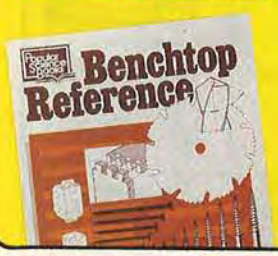

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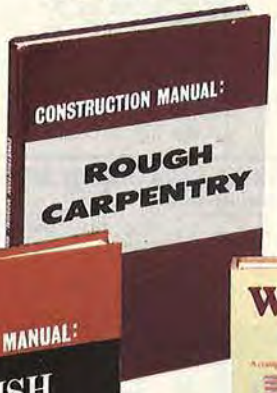

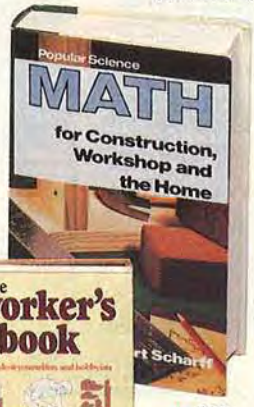

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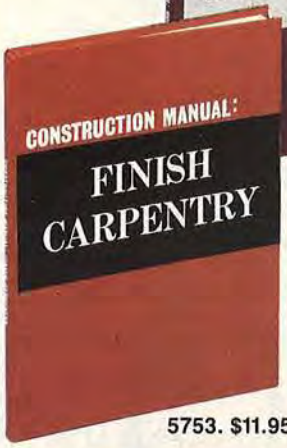

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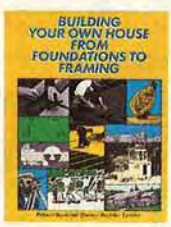

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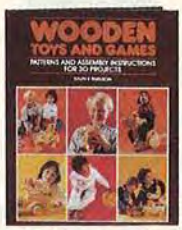

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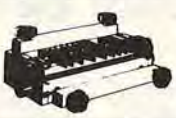

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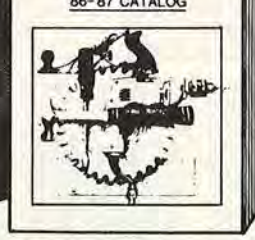

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TIPS FROM YOUR SHOP (AND OURS)

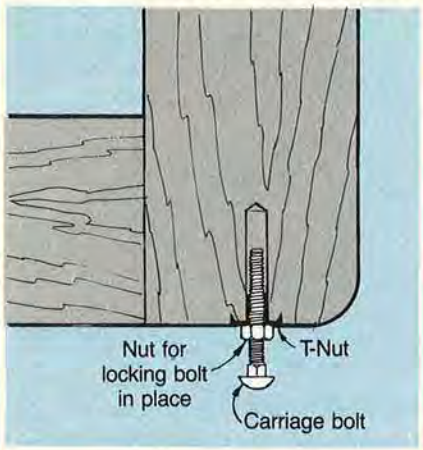
Continued from page 12

ON THE LEVEL

Do your tables and benches have the wobbles? Corrective leveling hardware can be expensive and sometimes hard to find.

TIP: Save money by making your own leveling hardware from T-nuts, carriage bolts, and nuts. Drill the holes for the T-nut deep enough to accept half or more of the carriage bolt, as shown *below.* After leveling the table, tighten the nut to lock the bolt in place.

— Stephen Cabiroy, Ballston Spa, N.Y.

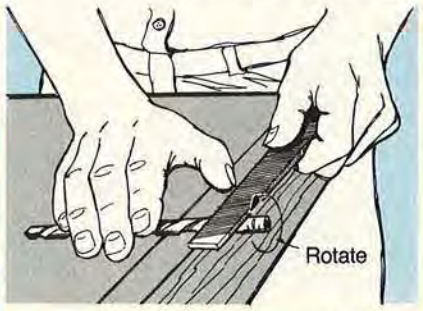


DRILL-BIT MAINTENANCE

After several uses, large-diameter bits often slip around in the drill chuck and create burrs on the bit shaft. Large burrs may prevent the bit from fitting squarely in the chuck.

TIP: A mill-bastard file quickly removes the burrs. Support the bit on a flat surface with part of the shaft overhanging the edge, as shown *below.* Slowly rotate the bit as you file. The same technique also restores damaged router bits.

— From the *WOOD* shop



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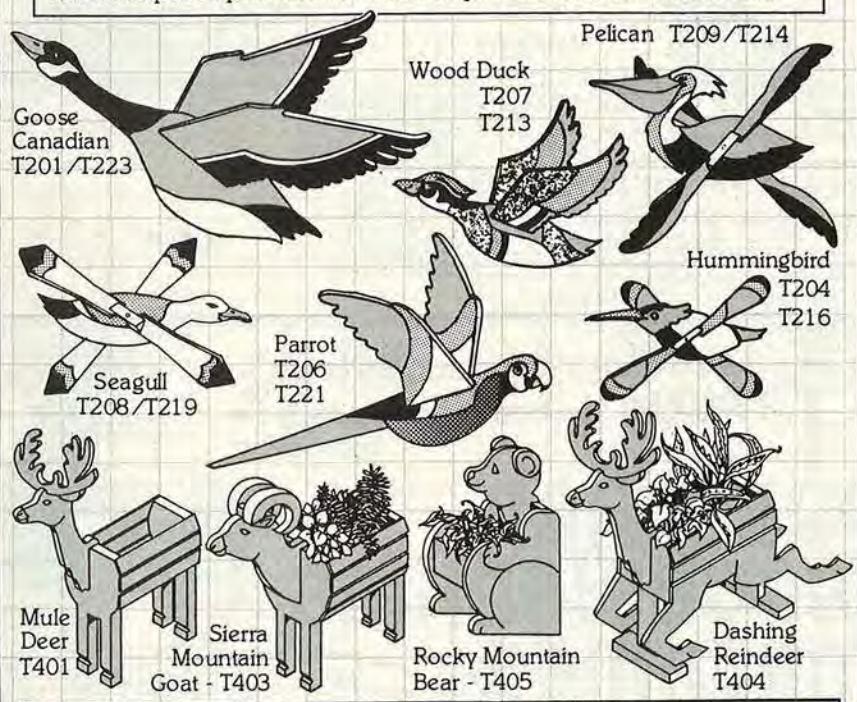

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TIPS FROM YOUR SHOP (AND OURS)

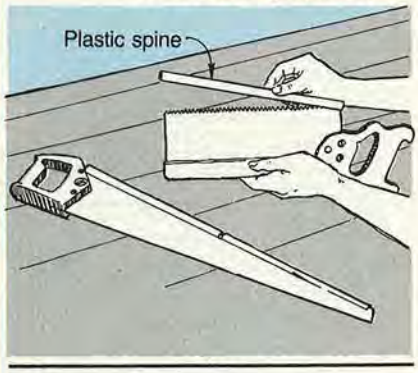
Continued from page 19

PASSING GRADE ON THIS REPORT

Exposed handsaw blades are a triple threat: They injure careless hands, they inadvertently mar wood, and they damage easily.

TIP: Although blade guards are available at most hardware stores, there is a cheaper alternative. The plastic spines from business-report covers (sold at office-supply stores) perform the same task as blade guards.

— Carl Dorsch, Oakdale, Pa.

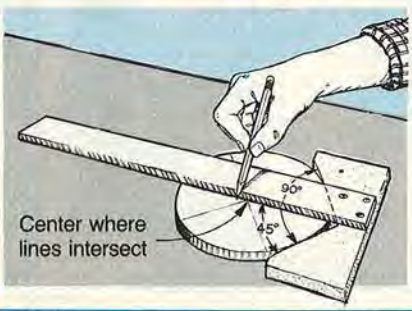


CENTER ISSUE

It's difficult to locate the center of cylinder turning stock and other circles with only a straightedge and pencil.

TIP: An inexpensive, simple jig quickly and accurately pinpoints the center of a circle. Cut a 90° notch from ¾" stock. Screw a straightedge over the notched base, as shown, to create a 45° angle. Place the circle against the guide and scribe one line. Rotate the circle about 60° and mark another line. To check the accuracy rotate the circle once more. If the lines form a small triangle, the center is inside the triangle.

— George Kaarenberg, Chincoteague, Va.

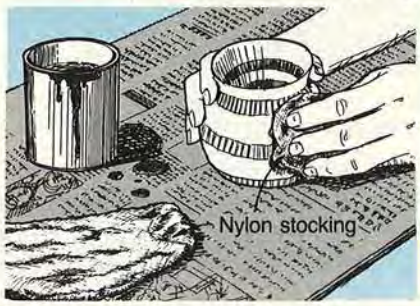


NYLON-SMOOTH FINISH

Polyurethane makes a great finish for many projects, but cleaning brushes after use often takes longer than applying the finish. And with quick drying products, brush marks can also be a problem.

TIP: Ask someone to save you a few pairs of discarded panty hose or nylon stockings. Cut the hose into 6"-long strips and use the wadded strips to apply the finish. Dispose of the strip after use. No brushes to clean and you get a "nylon-smooth" finish with no streaks or brush marks.

— From the *WOOD* shop



FELT BAD ABOUT MARRING?

Oops! You've just pulled another nail from a piece of wood and remembered, too late, how easily a hammerhead dents the wood surface.

TIP: Glue a piece of felt or apply adhesive-backed felt to the top of the hammer. It's dependable and much easier than searching for a scrap of wood when removing nails.

— Al Bruder, Chicago, Ill.

Timbers' Woodproject™ Directory

Guide To 768 Woodworking Projects PLUS FREE Binder Only $19.95

Timber's Woodproject Directory is a series of woodworkers' guides that tell you where to find the patterns for 768 projects. Everything can be made in your own workshop. Each guide **lists and illustrates** 64 projects!

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FOR EXAMPLE: Perhaps you would like to build a desk for your den. In guide **#3-Desks**, one of the 64 projects listed is a "Oak Raised Panel Library Table," Wood Magazine, June 1985, pg. 50. The Guide tells you how to get this project photocopy absolutely **FREE**!

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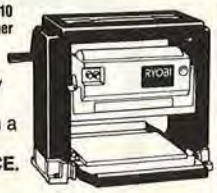

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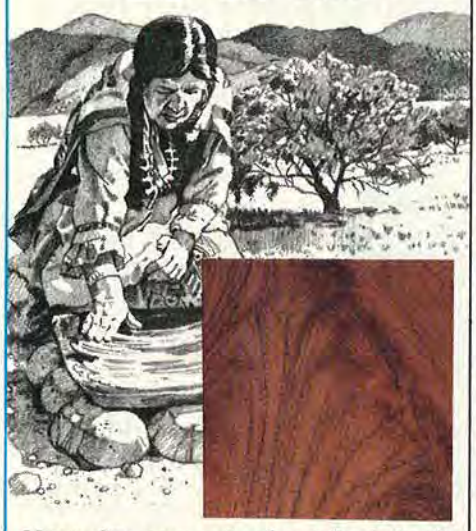
MESQUITE: the desert do-it-all



Mesquite, now prized as a fuel, feeds animals and man, and provides beautiful woodworking stock.

Desert survival requires extreme measures. The shrub-like mesquite tree, for instance, thrives in desert country from Argentina north to the southwestern United States by searching for water with an extensive lateral root system. It also sends taproots far into the earth. In fact, mesquite roots have been discovered 174′ below ground in a copper mine!

Not only do mesquite's meandering roots stem erosion of the desert's fragile soil, they also enrich it with nitrogen. But mesquite's role doesn't end there.

When the desert blooms, this small tree's flowers yield nectar for a delectable honey. Later, when the sun scorches other plants, its seed pods feed wild animals, livestock, and man. For example, Arizona's Pima Indians grind mesquite pods into a flour for tortillas and brew them into a psuedo-beer.

Mesquite's major use, however, is for fuel. The wood has a high BTU value, burns with little smoke, and produces minimal ash. Because of the wood's slow-burning characteristic and the unique flavor it imparts to meat cooked over its coals, mesquite charcoal briquets have become the rage for outdoor barbeques. Some fashionable city restaurants are now billing their fare as "mesquite grilled."

Knowing woodworkers seek out mesquite where it grows to tree-size because it shrinks less than three percent from green to bone-dry, works as easily as walnut, bends without steaming, resists wear, and has a color that grows more beautiful with age. Turnings, furniture, and parquet flooring made from this desert do-it-all prove quite notable.

Photograph: Hopkins Associates
Illustration: Jim Stevenson

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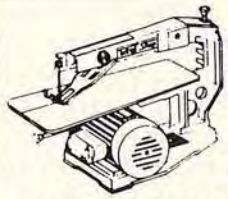

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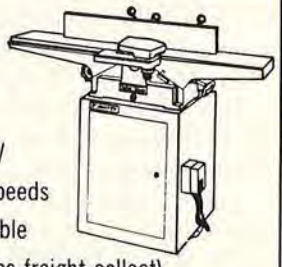

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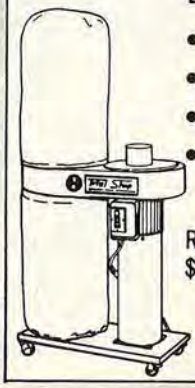

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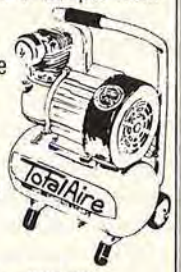

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The narrow-kerf band saw blade produces more useable lumber, with 80% less waste than chainsaw or circular blade mills.

You can mill hundreds of board-feet of dimensioned wood in a day's time.

At that rate you can pay for your Lumber Company pretty quickly.

To find out more about The Lumber Company, or to get a video cassette demonstration, call toll-free: Delta International Machinery Corp., 800/438-2486. (In PA, 800/438-2487.)

Converts to vertical band saw for ripping. (stand optional)

DELTA
Building On Tradition

PRODUCTS THAT PERFORM

Print this article

Here at WOOD, we're always looking for products that make life in the woodshop a bit easier, or make a project a bit nicer. When you find a product that really works for you, you tell your friends, right? That's the purpose of this column. We don't always feature the latest products on the market, but ones we think you, as a woodworker, will be interested in. And we test all of them to make sure they meet *our* standards of performance: we hope they'll meet your requirements, too!

Woodworker-friendly calculators

In a world of calculators that operate on the decimal system, these two speak woodworker's language — fractions.

The mechanically operated *Fractron Calculator* works like a circular slide rule; it quickly and easily adds and subtracts fractions, giving its answer to the nearest 1/64". To add with it, you just insert a pencil or pen point into the hole next to the first fraction in the equation, and rotate the dial clockwise until it stops. Repeat the process for each fraction you want to add. To subtract a fraction, you simply reverse the direction of rotation.

The *Construction Master* electronic pocket calculator quickly solves practically any problem involving fractional dimensions. With it, you can add, subtract, multiply, and divide, in feet, inches, and fractions (to 1/64"), as well as in decimal values.

The *Construction Master* also does the following calculations:

- Converts displayed measurements directly to or from the following formats: feet-inch-fractions, decimal feet, inches, yards, meters.
- Instantly calculates area and volume (both square and cubic measurements).
- Calculates angles (pitch, run, rise, slope). Also calculates board feet/dollar costs.

The *Construction Master* comes with two replaceable button-cell batteries, vinyl carrying case, user's manual, and a one-year warranty. Leather case optional. *Fractron Calculator, $9.00 postpaid from Graphic Systems, P.O. Box 881, Melville, NY 11747. Construction Master Dimensional Calculator $93.45 postpaid from Calculated Industries, 2010 N. Tustin Ave., Suite B, Orange, CA 92665.*

No more waiting: This glue dries *fast*

You're turning a bowl on the lathe and run into a crack, loose knot, or soft area. With *Hot Stuff* instant glue and *Hot Shot* glue accelerator, you can make repairs and get back to turning within a few minutes. No more long "down times" associated with slower-drying epoxy and conventional wood glues.

A water-thin cyanoacrylate adhesive, *Hot Shot* penetrates hairline cracks, making a complete bond. Adding a squirt or two of *Hot Stuff* accelerator makes the glue set hard in less than a minute. The firm also offers *Hot Stuff Special 'T'*, a syrup-consistency glue for filling small gaps, holes, and voids. The spray-on accelerator works with both types. *Hot Stuff Adhesive (Original) IG100, 2 oz. bottle, $8.95 postpaid; Hot Stuff Special 'T' IG200, 2 oz. bottle, $9.75 postpaid; Hot Shot Accelerator IG300, 3 oz. bottle, $3.95 postpaid. Available from Woodcraft Supply Corp., 41 Atlantic Ave., P.O. Box 4000, Woburn, MA 01888 or Craft Supplies U.S.A., 1644 S. State St., Provo, UT 84601.*

Continued on page 28

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Continued from page 24

A "fine" saw, any way you cut it

This adjustable jeweler's saw uses scroll-saw blades up to 6" in length to make the fine kerfs required for intricate projects. You can rotate the blade 360° in the saw frame to cut in any direction; twisting the wooden handle adjusts blade tension (it works like a coping saw). But use a light touch with this saw — we found that the thinner-sized blades break easily. *Adjustable jeweler's saw No. 250, Great Neck Saw Manufacturers; available nationwide through hardware stores and home centers. We paid $8.95 retail for ours.*

Foolproof square for perfect setups

There aren't many truly revolutionary "benchmark" layout tools, especially one as accurate as this newly patented electronic precision square. But we found *Square It* amazingly simple to use for determining precise 90° and 45° angles on tools requiring these settings. With it you can square up table saws, drill presses, radial arm saws, jointers, disk sanders, hand planes, and more. To use, just place this device against the adjoining metal surfaces to be squared, such as the saw blade and table, and adjust the tool until the device's small krypton bulb lights up.

The manufacturer guarantees an accuracy of *5/10,000 of an inch*. But to give you a better idea of how accurate this instrument is, after using the tool to set a 45° angle on our table saw (see photo *above*) and the light came on, we pressed down on a corner of the saw table with one finger. This caused enough table deflection to make the light go off again!

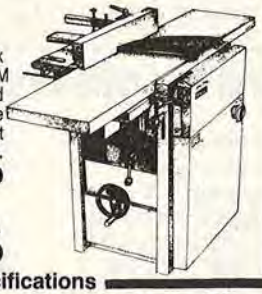
Square It comes with an illustrated, comprehensive manual with excellent detailed instructions for squaring-up over 15 stationary machines and hand tools. We tested the prototype model, shown in the photo *above*. The production model, which should be available by the time you get this issue, will have a dark-colored case with obscure, translucent plastic sides (not transparent, as shown here), and a krypton light bulb. It takes two replaceable alkaline batteries (included). *Square-It, $76.50 postpaid from ZAC Products Inc., 34 Renwick Street, New York, NY 10013.*

Continued on page 30

MiniMax
A Division of SCMI

Stroke Sander
This is a versatile machine for sanding panels and cabinets, or odd-shaped pieces. Features include a unique design which allows the table to fold up to save valuable floor space. Work table area is 100 x 37". Specify 4 HP/three phase or 3 HP/single phase motor. 1020 lbs.
#L55 List $2995.00
Sale $2795.00

13½" Jointer/Planer
Planer features a large 13½" wide by 7¼" thick capacity, spiral infeed, and 49 cuts per minute @ 23 FPM feed rate. Jointer has extra-long 63 x 14" table and 0-45° tilting fence. Includes 3 HP single or three phase motor (specify which), magnetic starter, guards, tool set and 3-knife cutterhead. 719 lbs. **#FS35 List $2195.00.**
Sale $1995.00



#FS35B As above with optional ⅝" chuck and mortise table. **List $2395.00.**
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Call for complete specifications

FREE freight on all machines except UNO and L55 sanders

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S45	18" band saw	$1099	$995
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C30	Universal machine	$2995	$2795
T3	¾" or 1" spindle shaper	$1699	$1575
T120	47" lathe	$948	$875
T120	Copy attachment	$868	$795
UNO	37" wide belt sander	$9990	$9495

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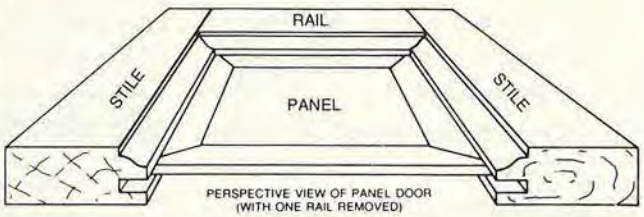

PERSPECTIVE VIEW OF PANEL DOOR (WITH ONE RAIL REMOVED)

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SUPPLIED WITH BALL BEARING CARBIDE TIPPED
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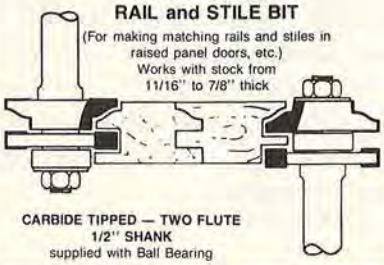

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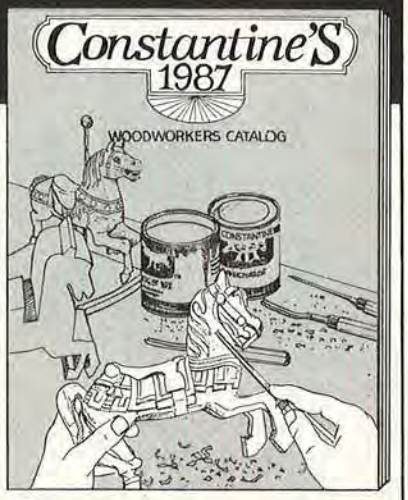

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PRODUCTS THAT PERFORM

Continued from page 28

No-mess spray adhesive bonds most materials

We used this convenient, multipurpose spray adhesive to glue cork to tempered hardboard, paper to wood, fabric to wood, plastic to plastic, and plastic to wood. The manufacturer, 3M, claims the clear-drying, high-tack adhesive will bond most porous and nonporous materials. Used as directed, it forms a strong, permanent bond between these materials. Or, use a light application for temporary bonding.

The product has an open time of 15-30 minutes. A 17 oz. can covers about 160 square feet. It's highly volatile, so use in a well-ventilated area, away from open flame. Avoid inhaling spray fumes. *3M Super 77 Spray Adhesive, available nationwide through hardware stores and home centers. We paid $7.69 retail for a 17 oz. can.*

These blades can hack it

We found that out when we used a *Lenox Hackmaster Reciprocating Blade* on the nail-embedded oak board in the photo *above*. Lenox uses electron-beam welding to fuse a hardened-steel cutting edge to a flexible back, giving you the best qualities of both wood- and metal-cutting blades. These blades come in a wide range of sizes and tooth configurations for both saber saws and portable jigsaws. *Lenox* claims that these blades will outlast conventional blades three to one. *Lenox Hackmaster Reciprocating Blades, $1.78-$4.42 each; available nationwide through hardware stores and home centers.*

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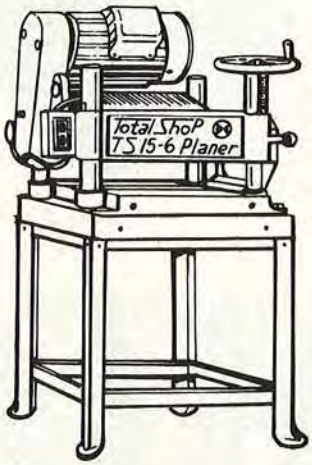

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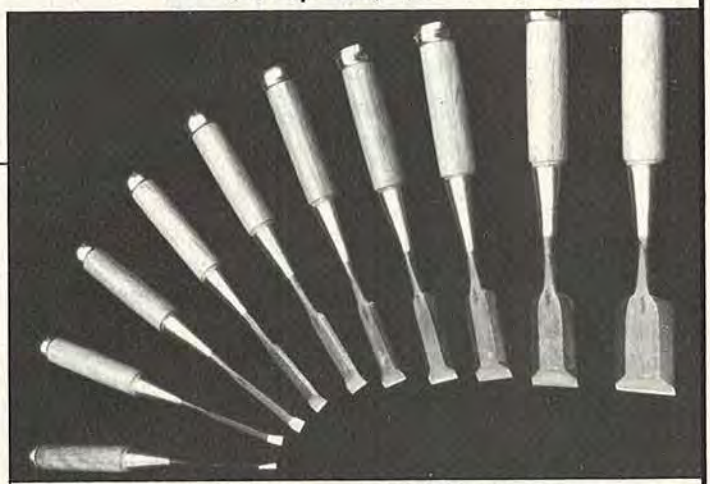

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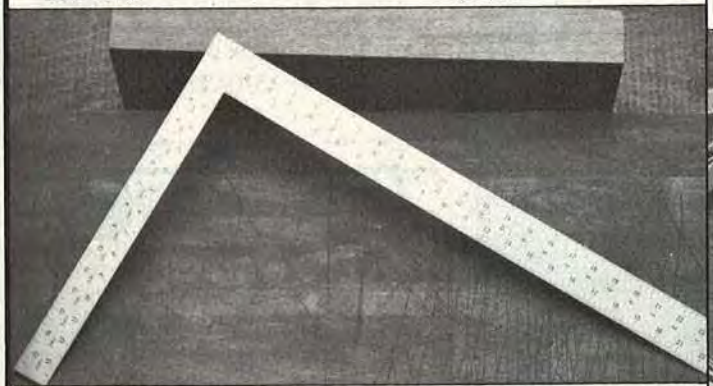

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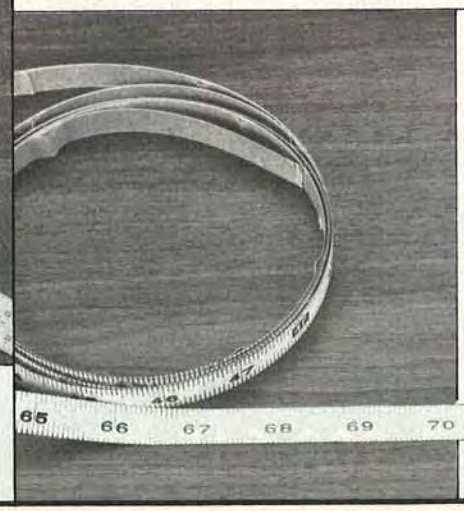

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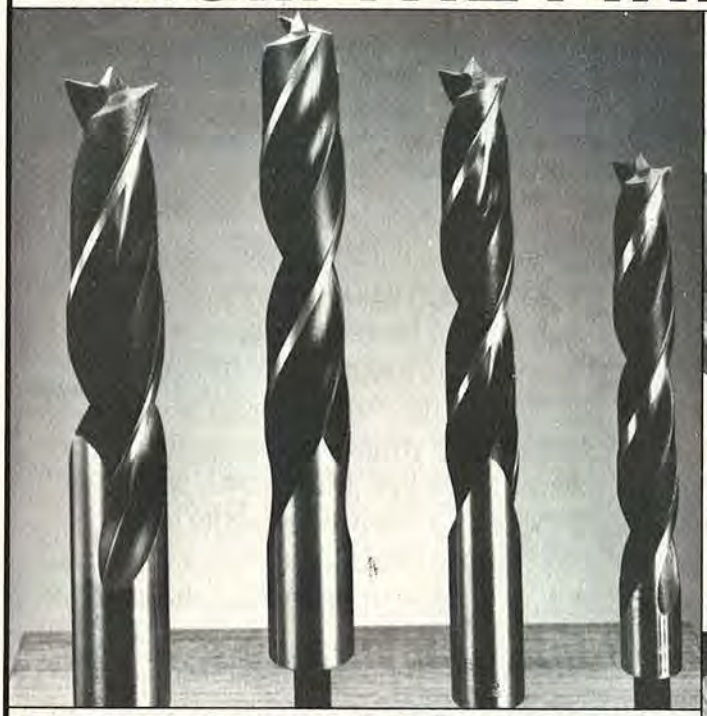

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Offer expires 28 Feb. 1987

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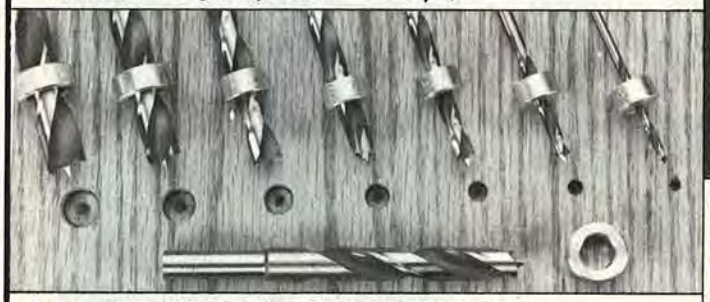
Sizes: 5/8", 3/4", 7/8", 1"

200-0020 *Regularly $19.95* $14.95



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Then watch the sawdust fly.

*Sale prices good only thru 3/31/87. Stands for bandsaws are extra, but stand plans are free. Price for Models 340 and 910 includes motor.

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YELLOW POPLAR

Willing to work, pleasant to paint, and you can't beat the price!

Onondaga Indians of New York called it *Ko-yen-ta-ka-ah-tas,* the "white tree," for the wood's pale color. Further south, tribes found the tree's size perfect for long canoes and its soft wood easily worked with their crude tools.

Colonists came and feasted on the strongly flavored honey made by bees from the abundant nectar in the white tree's flowers. The new settlers worked the wood, too — into furniture, interior trim, baskets, and boxes. They named the welcome tree yellow poplar, for the wood's resemblance to stock they had known.

Today, yellow poplar rates as the most valuable hardwood in the eastern U.S. In variety of uses, no other tree can match it. Yellow poplar can be found in construction lumber, moldings, plywood cores, actions in pianos and organs, matches, food containers, paper, woodenware, caskets, and even pool tables. You may find it just as versatile in your workshop, with similar characteristics of higher priced woods.

Yellow poplar sapwood

Yellow poplar heartwood

Yellow poplar streaked heartwood

Wood identification

Yellow poplar, or tulip tree, has a magnolia heritage but a pedigree shared by no other species in the U.S. *Liriodendron tulipifera* grows only in the eastern part of the nation, yet its origins trace back to geological remains in Europe and Asia.

You'll find yellow poplar growing singly among other hardwoods and pines from the Mississippi River to the Atlantic ocean. The northern limits are central New York; the southern terminus in northern Florida. Rich soil in the Ohio River Valley and the southern Appalachians produce the largest trees, with many yellow poplars attaining 150′ in height and girths to 10′. On these specimens, you often don't spot a branch for the first 80′!

Mature trees have thick, light orange-brown bark with many fissures, and frequent burls. Youngsters have bark that's thin and smooth.

If you can't distinguish yellow poplar by its bark, look to the leaves. Wider than they are long, the leaves resemble saddles.

When you see yellow poplar sapwood, you'll understand why Indians named it for its lack of color. Only a slight creamy tone makes it a bit less white than holly. Heartwood, on the other hand, may be nearly a canary yellow with tinges of green — hence "yellow" poplar. Occasionally, heartwood has dramatic streaks of gray, blue, and dark purple.

Grain is straight, normally featureless, and of medium texture. Light for a hardwood, yellow poplar weighs about 26 pounds per cubic foot dry, compared to red oak's 45 pounds.

Working properties

Yellow poplar has sufficient strength for most shop projects, and outranks many hardwoods in stability, stiffness, and resistance to wear. It works easily with hand tools, and has excellent gluing, nailing, and sanding qualities.

Because of its lackluster appearance, yellow poplar doesn't lend itself to clear finishes or stain. It does, however, accept paint readily.

Uses in woodworking

Manufacturers find many ways to use yellow poplar, and you will, too.

The straight grain and softness suit carvers. Woodturners find yellow poplar makes wonderful bowls that impart no taste and have no odor. You can easily work the wood into toys, furniture, moldings, and case goods.

Cost and availability

Abundant on the East Coast, yellow poplar becomes less available farther west. Where sold, you can usually find veneer as well as lumber. Boards range up to 20″ wide, 16′ long, and in thicknesses of 3″ or more. Cost may be as low as $1 per board foot near where it grows.

Illustrations: Steve Schindler

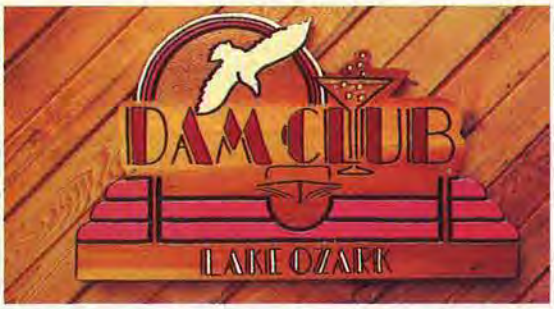
Using his wrists and fingers to lift and guide, Dave free-hands his way through a sign.

Dave Jordan's Specialty...

RUSTIC REDWOOD SIGNS

Print this article

At Lake of the Ozarks, Dave Jordan crafts them freehand, and tells you how it's done



In his "Rustic Redwood Signs" shop, Dave zips through redwood boards, cedar boards, and oak recipe-box lids 12 hours a day from late May to September. In a busy month (as it is most of the summer) he'll go through 7,000 board feet of redwood alone! And the routing is all done freehand.

Name a name and Dave's probably cut it into wood. Last names, first names, pets names, boats names, business names — he's made them all. And quickly.

"A Pantograph or anything else for routing lettering just plain slows you down. With those things you can't make a sign as fast, or as personally handcrafted, as you can freehand," Dave explains.

Fast, yes! But dangerous? "About the only thing to worry about is getting dust or wood chips in your eyes. No one would have trouble holding a router back," he says.

PRACTICE, THEN PRACTICE SOME MORE

Freehand routing does take lots of practice, though. And while Dave is accomplished now, he practiced plenty at first.

He got started making signs quite by accident. Someone stopped by his home and asked if he could make one for them.

"I didn't know how, but said I would. That night I made it with a router, a round-point bit, and a pine board. The guy liked it. Right then I went out and bought some redwood and practiced every night until I thought my signs looked good enough to sell. I won't sell anything if I'm not proud of it."

Since then, Dave has added routed-in scenes, landscapes, buildings, flowers, hearts, cows, pigs, and horses to his signs. But Dave draws the line at pets like a dog or a cat.

"A woman asked me once if I could put a likeness of her dog on her sign. I said 'Sure, bring me a photograph.' She did and I painted Spot on the sign for an extra $1.50. I didn't think it looked bad, but to her it just wasn't her dog. I asked her, 'What do you want for $1.50, a color portrait?' So I refuse to do dogs or cats. They're too personal. You can't, no matter how much you try, paint pets to the owner's satisfaction."

With a paintbrush, Dave is no Rembrandt. That's why Lori does most of the painting on their redwood signs. But give Dave a router and you'll see pure artistry. Among the craftsmen that call themselves "redwood cutters", Dave has proven by his products that he ranks among the best.

TRICKS OF THE TRADE

Dave maneuvers his router through a board like a snake through prairie grass. In learning to do so, he's picked up a few tricks of the trade.

The first, using the right wood. Dave goes right to the lumberyard to select his ¾"-thick, knot-free, clearheart-grade redwood. Even beyond that, he's finicky. "The closer and tighter the grain, the better it works for free-handing," advises Dave. "I test mine by running my finger across it. If the nail bumps over the tiny ridges, you know the router will do the same thing. Sometimes you can turn the board over and rout, but if you can't, don't use it."

The minor amounts (compared to redwood) of Tennessee red cedar and white oak he uses pose other problems with no easy solutions. The cedar naturally has knots, which he routes around; the oak he battles through because it's just plain tough.

Dave has also reversed the handles on his over-the-counter, 1-hp., Hitachi plunge router. This lowers its center of gravity and makes it easier to control from a low, tabletop working position. He also removed the subbase for

Continued

Until we met Dave Jordan, 40 (that's him at left), we really hadn't given sign making much thought. But with his freehand routing technique he turns out such great-looking signs that we had to learn just how he does it.

With Lori, his wife and partner, and son, Sean, Dave lives at Lake Ozark, Missouri — a popular vacation spot. From their shop they sell signs to tourists as souvenirs of an Ozark visit. During the off-season the Jordans travel to shopping malls to market their signs.

Dave made the switch from crafting kitchen accessories to routing redwood about 11 years ago, and now, as you'll learn, he's a master at it.

RUSTIC REDWOOD SIGNS

Top left. **A dust attachment made from an upholstery nozzle connects Dave's router to his shop vacuum. Otherwise, dust and chips would hinder his vision.**

Below left. **Dave uses the penciled-on letters as a guide. He calculates spacing as he goes, fills in with a design.**

Top right. **Black paint, left in the routed letters after sanding, makes them stand out against the background.**

Above. **Lori paints the scenes most people like on their signs with acrylics. Then, Dave sprays on two coats of tough exterior polyurethane varnish.**

a clearer view of the routing path.

To eliminate dust problems, Dave jury-rigged a collection system. He mounted an upholstery nozzle from a household carpet vacuum to the back of his router so that he can connect it with a hose to his shop vacuum.

Dave prefers to use ½" carbide-tipped, V-groove chamfering bits (which only stay sharp about a month) for most of his lettering. Really large signs call for the wider letters cut by a ¾" bit.

What about clamps? "They only get in the way," Dave says. To keep the stock from slipping he glued down a 12 x 30" piece of industrial sanding belt to his workbench top. The router's weight, plus the coarse abrasive grit biting the wood, keep the stock rock still.

HOW DAVE ROUTS HIS SIGNS

If Dave followed his instincts, all his signs would end up reading backward. That's because he has dyslexia — the tendency to reverse letters and words. "For the first few years we were in business, Lori had to double-check all spelling because I could cut a name backward as fast as forward. Names still look better to me backward," he muses. So to be safe, Dave takes the name to be routed right off an order form Lori filled out.

In marking the letters down on the board with a grease pencil, Dave doesn't measure, calculate exact spacing, or use any kind of ruler or layout device. Like his routing, he freehands the lettering, too, never planning to follow the lines anyway. They serve only to guide. "If I end up with too much space on either side after the routing, I'll fudge with the design for balance," he says. "I like to use as much of the board as possible so the letters will be large and readable. That usually works to be about three-fourths of it."

With the letters penciled on, Dave sets the router's cutting depth to the top of the bit's V-shape, and explains: "Most beginners think that the shallower you cut, the better for free-handing. But you can't control shallow cuts. You have to cut deep. This gives the bit more wood to cut, causes drag, and allows you more control."

The router screeches as Dave begins to cut. He guides it down the straights and through the curves of the scrolly, Old English-style let-

ters that he favors as fast and fearless as a Grand Prix racing driver.

His forearms resting on the workbench, Dave's wrists and little fingers direct the routing. The plunges, the lifts, are barely visible as the router moves across the sign board. Twelve letters take him less than two minutes!

Dave doesn't make many mistakes, and he never goes back to correct one. "I'd rather leave that little nick. Fixing it makes a thicker letter that looks worse than the mistake. Just keep the flow going."

ADDING THE FINISHING TOUCHES

To highlight the routed letters, Dave sprays the signboard with flat-black, oil-base enamel, then dries the paint in front of a fan.

In five minutes, the sign's ready for sanding, and Dave moves it to the sanding bench. The board fits between the two wood strips he's fastened to the bench in the shape of a framing square. Like a parking brake, the strips keep the board from being moved by the belt sander.

Dave guides the belt sander lightly over the sign. He removes black paint from all areas except the routed letters, the edges, and cuts that form part of the landscape Lori will paint on in acrylics.

In the sales area of the shop, Lori divides her time between taking orders, painting, and collecting money for the signs. She often seems to do all these jobs at once — talking to customers as she dabs on green, then blue, and tending the register with a wet paint brush in hand. Yet, the shapes emerge: trees, a pond, a country cottage. The theme the customer has chosen highlights and supports the letters, making the sign a one-of-a-kind, personalized artwork.

Two coats of clear, exterior-type polyurethane varnish to withstand the elements, and the sign is ready for the customer to take home and hang. Dave stands behind his product, too. "Satisfaction guaranteed or your money back." But returns are negligible. Dave likes to say that his rustic redwood signs "will go through anything but a divorce."

TO FREEHAND ROUTING

TRY THIS COUNTRY-STYLE SIGN FOR A FIRST-TIME PROJECT

Note: *You'll need a 3/4x3 3/4x17 1/2" clearheart redwood board for the sign (and several scrap pieces to practice on), a 1/2" V-groove chamfering bit for your router, safety glasses, enough coarse sandpaper to serve as a non-skid pad, flat-black spray enamel paint, blue acrylic paint, and clear exterior polyurethane varnish.*

1 GETTING STARTED

Start by fastening coarse sandpaper (coated side up) to your workbench with double-faced tape or adhesive. Use enough paper to cover an area at least the size of your sign board.

If you can, do as Dave Jordan does and reverse the handles on your router so your grip will be closer to the workpiece. Next, remove the subbase to better view the bit.

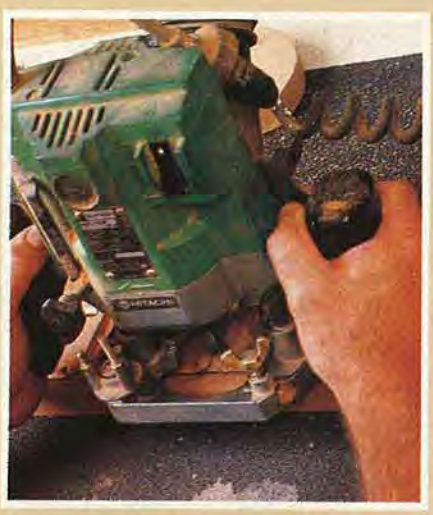
2 SAWING THE STOCK AND DRAWING THE LETTERS

On your band saw, or with a jigsaw, cut the jagged "teeth" on both ends of the stock. Draw on the letters and the hearts with a grease pencil.

3 ROUTING VERTICALS

Adjust the bit in the collet so it cuts a furrow the depth of the entire "V". Don your safety glasses, and starting at the left side of the sign blank, cut all the vertical lines first. Work from the top edge of the sign down by pulling the router toward you.

Make the oblong cuts at the tops and bottoms of vertical lines by tilting your router slightly from one side to the other. *Don't* lift the bit out of its path and drop it back down while making these cuts or you'll cut extra width you can't correct. To make rounded letters, cut in one continuous move.



Rout all vertical lines first.

4 ROUTING ACROSS

Cut the horizontal lines from right to left, lifting the router out of the groove just as it intersects with the vertical line.

5 MAKING IT RUSTIC

With your bit set to the same depth used for the letters, make random, irregular chamfering cuts along the edges of the top and bottom, and along the "teeth" sawn on the ends.

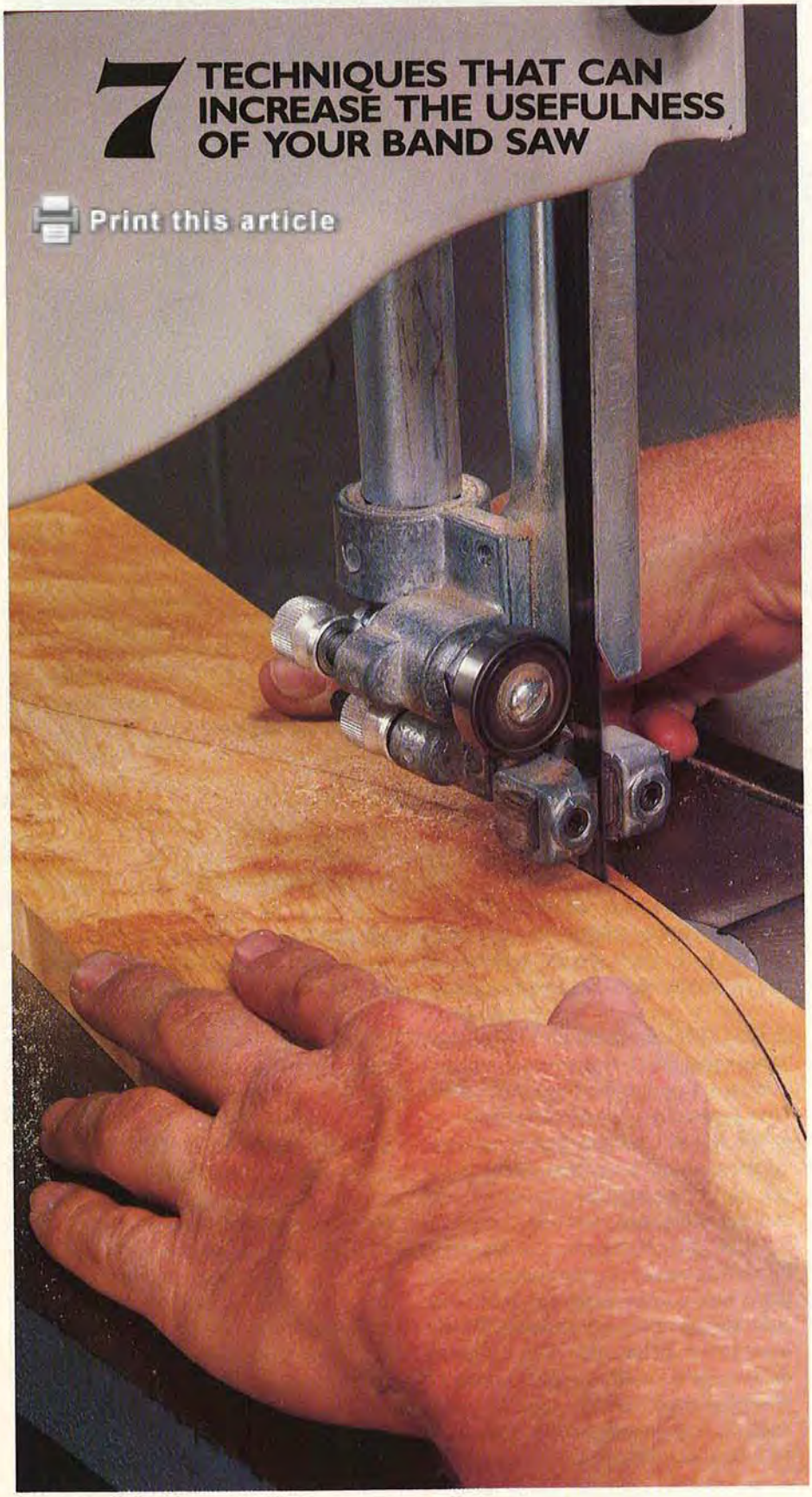
Next, adjust your bit to a 1/16" cutting depth and rout the outline of the hearts at the ends of the sign.

6 PAINTING AND FINISHING

Spray black paint into the routed letters, the heart shapes, and on the sign's edges. Let paint dry, then sand with 80-grit sandpaper, leaving the black in the letters and heart outlines, and traces of it on the edges of the board. Paint the hearts, let dry, then coat the sign twice with polyurethane varnish.

Project Design: Dave Jordan
Photographs: Richard Mansur
Produced and written by Peter J. Stephano

CUTTING CURVES—



When you need to cut simple curves in flat stock, you head for the band saw, right? But it's a shame to limit such a versatile machine to that one simple task. In fact, the band saw does a wider variety of cutting chores than any other saw in our shop.

On the following pages, we share our versions of seven band-sawing techniques you can use to start — or add to — your collection. They're simple and inexpensive, and help expand the usefulness of this machine considerably.

1 HOW TO MAKE STRAIGHT CUTS

Ever try making long, straight cuts using the rip fence on your band saw? If your results came out like ours, you were probably disappointed. The reason: Band saws use thin, narrow, flexible blades — great for cutting curves, but poor performers on the straightaways. Most band-saw blades, we found, want to wander a bit off the cut line, no matter how accurately we set the fence. (The large band saws used for resawing lumber [resaws] are a different breed — they use blades 2″ or wider.)

Enter, the pivot block

Rather than try to make our band saw cut straight with a rip fence, we use a pointed pivot block and maneuver the stock to keep the blade on the cut line. A simple solution and it works great!

Actually, we prefer to do most of our ripping and resawing on the table saw because the rigid, circular blade makes a straighter, cleaner cut. We've made a special table-saw jig to help resaw wide boards, featured in the article, *How To Resaw Safely,* in the October, 1985 issue of *WOOD.*

AND MUCH MORE

How to make the pivot block

We use two slightly different kinds of pivot blocks — one for ripping and one for resawing, as shown in the photos. The pivot used for ripping (*photo A*) also works for cutting parallel curves, (*photo C*).

Make the block the same height as the thickness of the stock you're ripping, or the width of stock you're resawing. Notice that the resawing pivot block we used in *photo B* was made for wider stock than the walnut board being resawed. In this case, the block worked fine, but ideally you should lower the saw's blade guides as close to the top of the work as possible for maximum blade support. For help in making a pivot block, see the drawing *below.*

Note: *When making the pivot block, be sure the pivot point (front edge) and base form a precise 90° angle, as shown in the drawing,* below left. *Otherwise, the pivot point won't be square to the blade when you square the saw table and clamp the block to it.*

Using the block

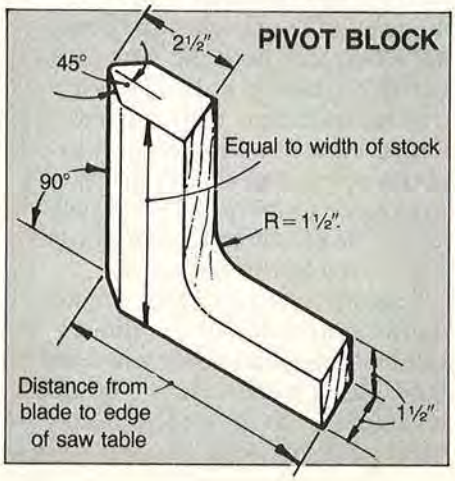
First, select the widest blade your saw will handle, because the wider the blade, the straighter the cut.

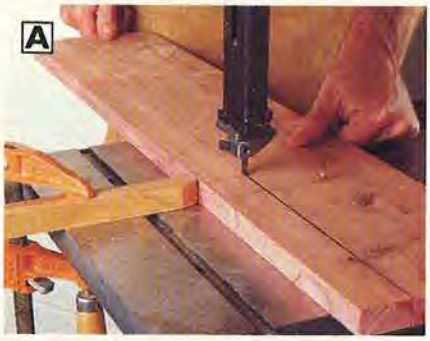
Square the table with the saw blade. Then, mark the cut line on the stock and position the mark against the saw blade. Clamp the pivot block to the saw table and against the stock. Adjust the block so the blade cuts to the outside edge of the mark. Be sure to align the block's pivot point with the *cutting* edge of the blade.

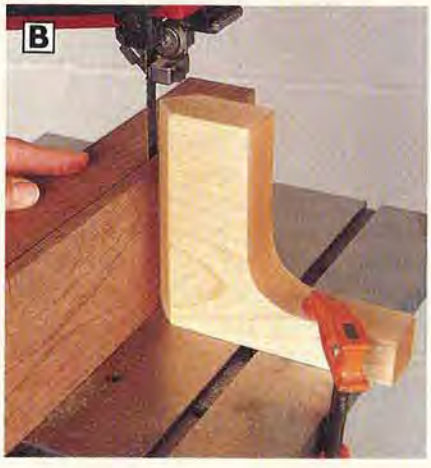
Note: *When marking a piece for cutting, allow an additional 1/8" thickness for planing or jointing to final dimensions.*

With the block clamped in position, test-run a piece of scrap wood through the saw to get the feel of the procedure and to make sure the cut will be accurate. If you're resawing, the stock must be vertically square to the blade, or the resawn pieces will be tapered across their width. With the pivot block square to the blade and the stock square to the pivot block, you should not have a problem.

Feed the stock slowly into the saw, using one hand to guide the trailing end as necessary to keep the blade on the cutting line. Use your other hand to hold the stock firmly against the pivot block. Once you get the hang of it, you'll make straight cuts every time.







2 HOW TO CUT PRECISE PARALLEL CURVES

You can also use the pivot block to make curved parallel cuts. In use, it does essentially the same thing as for straight cuts: It maintains a uniform distance between the edge of the piece and the cutting line.

To curve stock with it, lay out and mark the first curve cut on the stock, then cut it freehand on the band saw. Sand the cut to remove any rough spots.

Next, set a pencil compass or dividers to the desired width and mark the second (parallel) curve on the stock, using the first curve as a guide. Align the saw blade with the mark for the second curve and cut about 1" into it. Turn off the saw and clamp the pivot block to the table, against the curved edge already cut. For accuracy, make sure the pivot point aligns with the cutting edge of the saw blade.

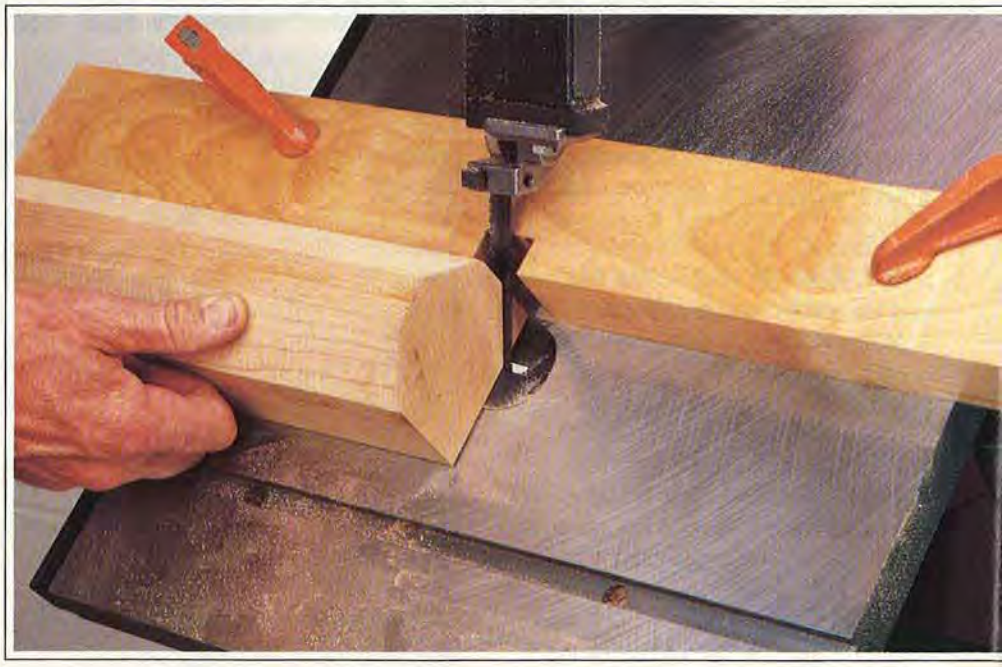
Guide the board slowly through the saw with one hand while holding the board against the pivot block with the other. Turn the stock as needed to keep the cutting edge at a right angle to the pivot (*photo C*).

With the pivot block, you'll find the second curved cut will be easier to make and will more accurately duplicate the first curve than if attempted freehand.

Continued

CUTTING CURVES—AND MUCH MORE

3 QUICK CHAMFERS ON A "BACKWARDS" FENCE



If you usually cut chamfers on the band saw with the rip fence positioned on the *downhill* side of the stock, the notched-fence setup in the photo *at right* may look backwards at first glance. But look again! With this fence you can cut the same size chamfer on any straight edge of any size or shape piece *without* having to reset the fence for each cut. So you can chamfer rectangles, octagons, triangles, and similar geometric shapes (not curved pieces).

How to make the fence

From a squared piece of stock, cut the fence slightly longer than the

4 CUTTING CIRCLES WITH HELP FROM OUR TABLE EXTENSION

Cutting circles — especially tabletop-sized ones — always challenges us. But the sturdy band-saw table extension shown here makes the job unbelievably easy and cuts perfect circles every time.

The secret lies in the four ball-bearing casters inset into the table extension. They allow large, heavy pieces of stock to spin around the extension's pivot point almost effortlessly.

Building the table

If you build the extension to the dimensions shown in the drawing *at right*, the maximum radius you can cut will be 19″ plus the distance between the blade and the front edge of your saw's table (7″ on our saw, including thickness of angle brackets). With our setup we can cut circles up to 52″ in diameter. You may extend the table extension length in order to cut larger circles with it.

How to use the extension table

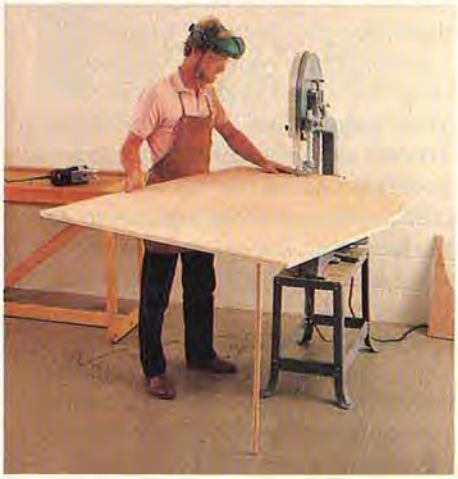
Attach the table extension to your saw table as shown in the drawing *at right*. Draw a centerline on the table extension perpendicular to the *front* edge of the saw blade.

Determine the radius (½ the diameter) of the circle you want to cut. Then, transfer this measurement to the table extension by measuring out from the saw blade along the centerline of the exten-

sion, as shown in the photo *above*. This point will be the pivot for the circle you'll be cutting. Drill a small hole into the table extension at that point and insert a small finish nail upside down. Let about ⅛″ of the point protrude.

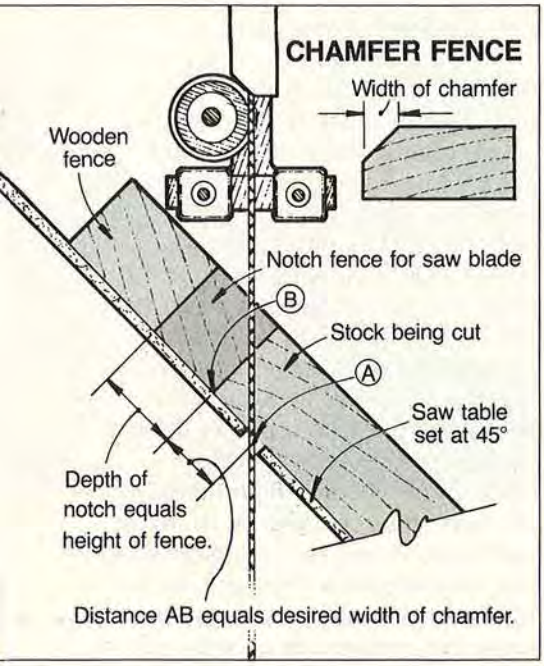
From the material you're using for the circle, cut a square sheet 2″ larger than the diameter of the circle you want. Then cut a 1″-square notch at the center of one side to admit the saw blade.

On the bottom side of the piece, draw a centerline from the center point of the notch you cut to the opposite side of the piece.



Position the piece on the table with the saw blade flush against the back of the notch. Now, lower the workpiece onto the table extension. Line it up so the protruding nail aligns with the centerline marked on the bottom side of the piece. If necessary, tap the workpiece to drive the pivot nail into it, firmly enough so the piece will be stable when rotated.

Start the saw and slowly rotate the workpiece to cut out the circle. On large circles, we use a portable jigsaw to remove the outside waste pieces to keep them from flopping or breaking off.



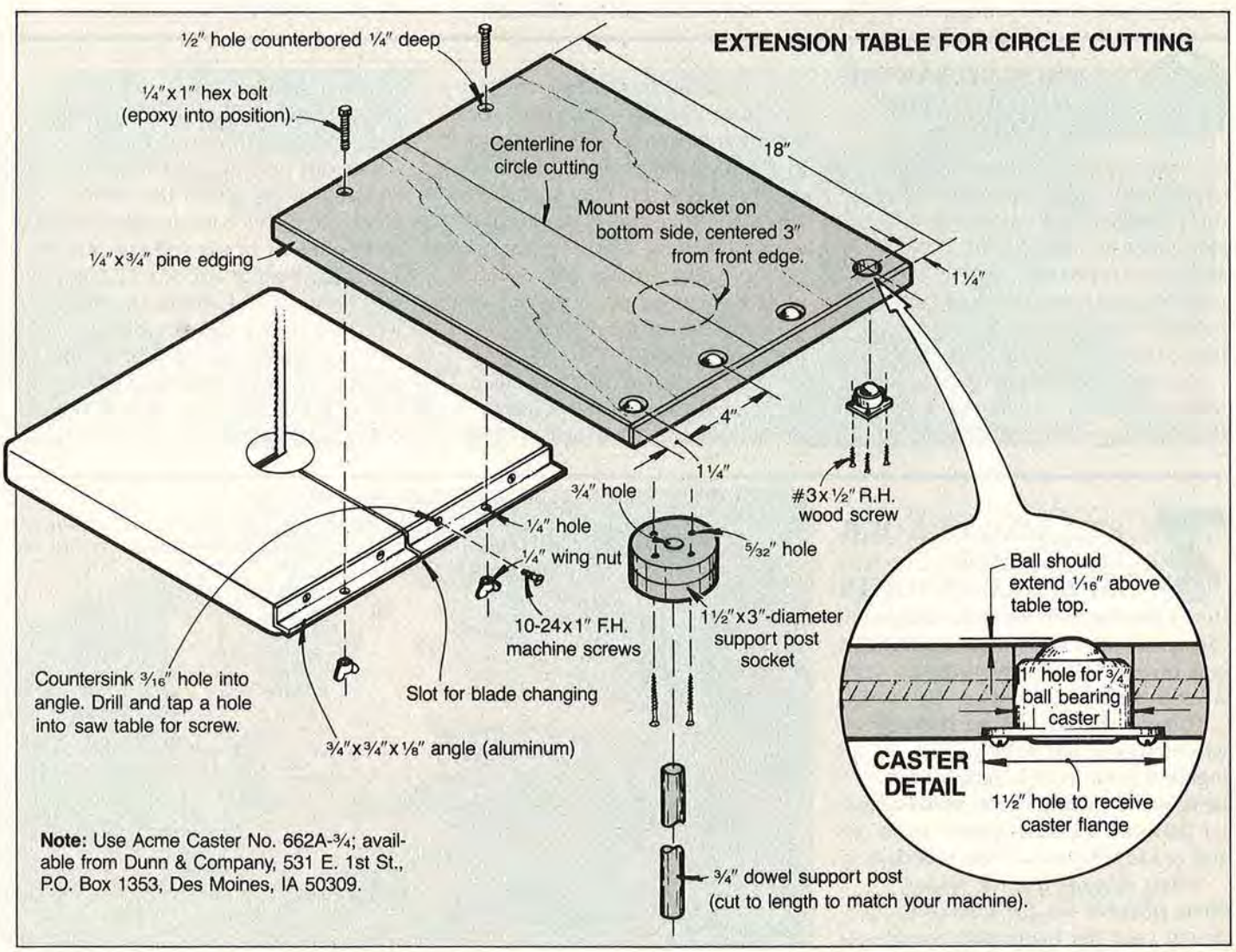
width of your saw table. Cut out a notch in the center of one edge equal in depth to the fence height, as shown in the drawing *at left*. For example, if you're using 2"-thick stock for the fence, cut a notch 2" deep. With the fence, you can cut chamfers any width up to 2", depending on how you set it. Don't worry about notch width — just cut it wide enough for the saw blade, with some clearance for sideways adjustment of the fence.

How to set up the fence

First, tilt the saw table to 45°. Then, from the point where the front side of the saw blade intersects the plane of the table top (*Point A* in the drawing *at left*, measure back up the table the desired width of the chamfer. Set the front edge of the fence at this point (*B*). In other words, the distance *AB* equals the width of the chamfer you will cut.

Now, with the fence set at the desired distance, square it to the saw table, and clamp it in position. If necessary, raise the blade guide assembly enough to clear the top of the fence.

As a precaution, test the chamfer width on a piece of scrap wood, then make any needed adjustments to the fence. Precise adjustments can be cumbersome to make with the table tilted at 45°, with gravity working against you. If possible, have a helper do the clamping while you hold the fence in the correct position.


EXTENSION TABLE FOR CIRCLE CUTTING
½" hole counterbored ¼" deep
¼"x1" hex bolt (epoxy into position).
Centerline for circle cutting
18"
Mount post socket on bottom side, centered 3" from front edge.
¼"x¾" pine edging
1¼"
4"
1¼"
¾" hole
#3x½" R.H. wood screw
¼" hole
¼" wing nut
5/32" hole
Ball should extend 1/16" above table top.
10-24x1" F.H. machine screws
1½"x3"-diameter support post socket
Countersink 3/16" hole into angle. Drill and tap a hole into saw table for screw.
Slot for blade changing
1" hole for ¾" ball bearing caster
CASTER DETAIL
¾"x¾"x⅛" angle (aluminum)
1½" hole to receive caster flange
Note: Use Acme Caster No. 662A-¾; available from Dunn & Company, 531 E. 1st St., P.O. Box 1353, Des Moines, IA 50309.
¾" dowel support post (cut to length to match your machine).

Continued

CUTTING CURVES – AND MUCH MORE

5 A NIFTY WAY TO CUT PRECISE ARCS

Long, smooth, flowing arcs are generally difficult to lay out and cut accurately on the band saw. You'll find them a snap, though, with this useful accessory for the saw extension table described on the previous pages. For lack of a better name, we call our device an *arc trammel.*

Note in the drawing *at right,* that the *trammel head* itself measures only 12" long, so it won't take up much storage space in your shop. With it, you can quickly and easily cut arcs in boards up to 16" long. If you want to cut arcs in longer boards, you can attach a *backer strip* to the trammel head with two screws, to support the long workpiece.

How to make the trammel

Cut the *trammel beam* to a length that equals the distance from the band saw blade to the end of your table extension, minus the width of the trammel head. For other dimensions, refer to the drawing *at right.*

The arc trammel pivots on a metal *trammel point* that clamps to the trammel beam. See photo *at right.* The farther back you attach the trammel point on the beam, the larger the radius of the arc you can cut. You can buy trammel points at most hardware stores and through most mail-order woodworking suppliers.

How to use the arc trammel

If you haven't already done so, draw a centerline on your saw's extension table. (Make sure you align the centerline with the cutting edge of the saw blade.)

Mark the centerline on the arc trammel head. To do this, attach the trammel point to the trammel beam, against the trammel head. Mark a line across the trammel head that aligns with the pivot point on the trammel point, as shown in the drawing *at right.*

To cut arcs in pieces longer than the trammel head, first cut a backer strip about 3" longer than the piece you're cutting. Attach the backer strip to the trammel head.

Mark the centerpoint of the stock to be cut and align it with the centerline marked on the trammel head. To set the radius of the arc, measure back from the saw blade the desired distance and mark the pivot point on the centerline of the extension table, as shown in the photo on page 42.

6 COMPOUND SAWING TECHNIQUE FOR 3-D CUTOUTS

By sawing on two adjacent sides of the same piece, you can make three-dimensional cutouts quickly and easily on a band saw. Typical applications include carving blocks, cabriole chair legs, and toy boat hulls such as the one we show being cut in the photos *at right.*

You can either make paper patterns as we did, or simply draw the patterns on the workpiece.

If you need to remove the pattern after cutting, use artist's spray mount adhesive to affix the pattern to the workpiece. Available at art supply stores, this adhesive allows you to remove the pattern easily, without leaving adhesive residue on the wood surface. (If you complete the cut on all four sides, the patterns end up being attached to the waste wood.)

Cut a square or rectangular piece of stock to rough dimensions. Attach the patterns to two adjacent sides of the workpiece. (Note how we did it for the boat hull as shown in *photo 1.*)

Cut out one side of the profile (*photo 1*). Then tack the waste piece or pieces back in place with small nails or brads and cut out the adjoining profile (*photo 2*). Nail into waste wood where the nails won't be hit by the saw blade.

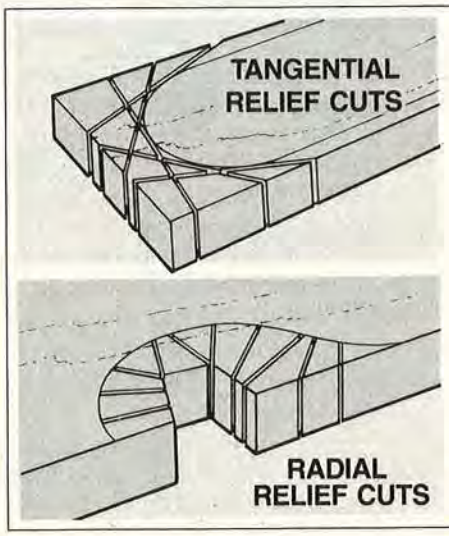
When you complete the second cutout, the waste pieces will fall away, and *voila!,* you have now cut out a double profile.

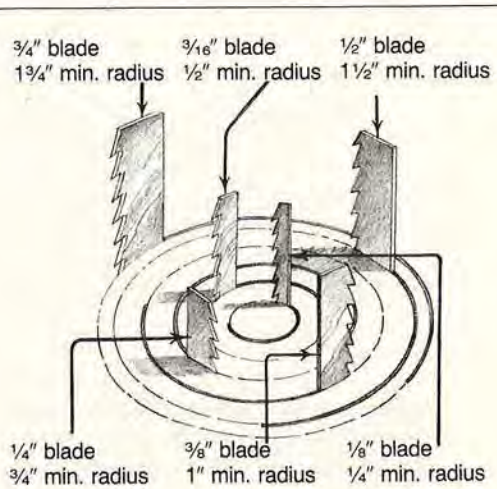
7 STACKING UP YOUR DUCKS FOR MULTIPLE CUTOUTS

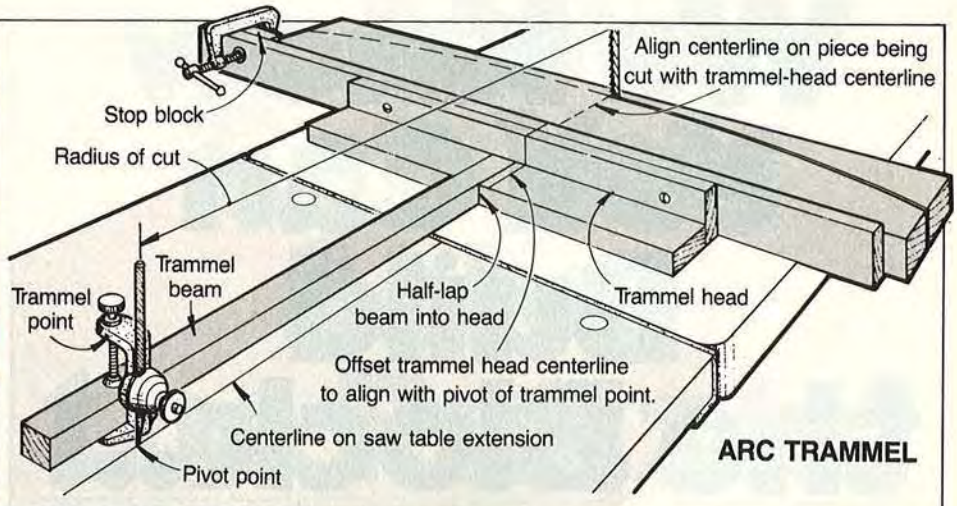
Here's an easy way to make duplicate ducks and any other multiple cuts on your band saw — just stack the pieces.

To keep the stack from shifting while cutting, stick the pieces together with double-faced cloth tape. We found this tape holds better than double-faced paper tape and readily comes off the wood.

When cutting, use the widest blade possible for the curves to be cut (see the blade size chart).



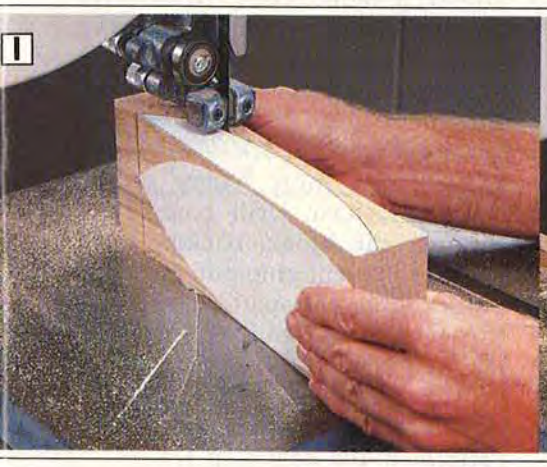


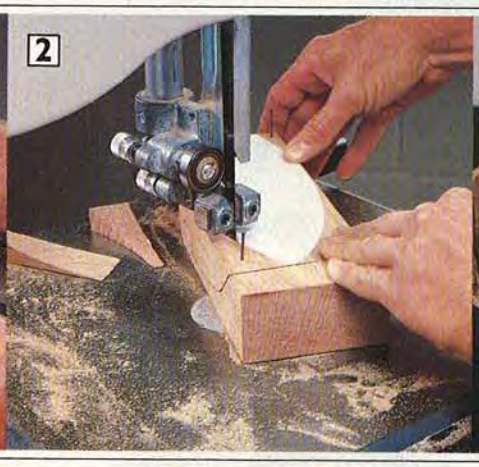

Align centerline on piece being cut with trammel-head centerline
Stop block
Radius of cut
Trammel beam
Trammel point
Half-lap beam into head
Trammel head
Offset trammel head centerline to align with pivot of trammel point.
Centerline on saw table extension
Pivot point
ARC TRAMMEL

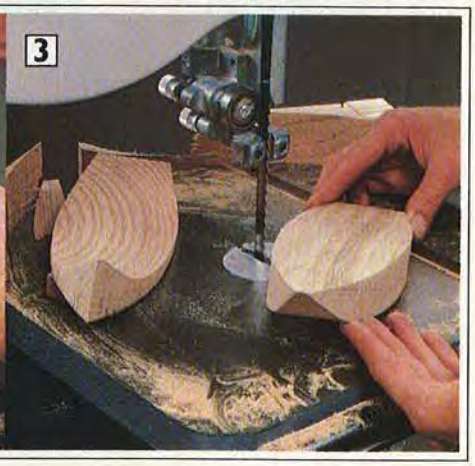
Now position one end of the workpiece against the saw blade at the point where you want to start the cut. Clamp the trammel point to the trammel beam at the pivot point marked on the extension table; then push the point into the table to act as a pivot.

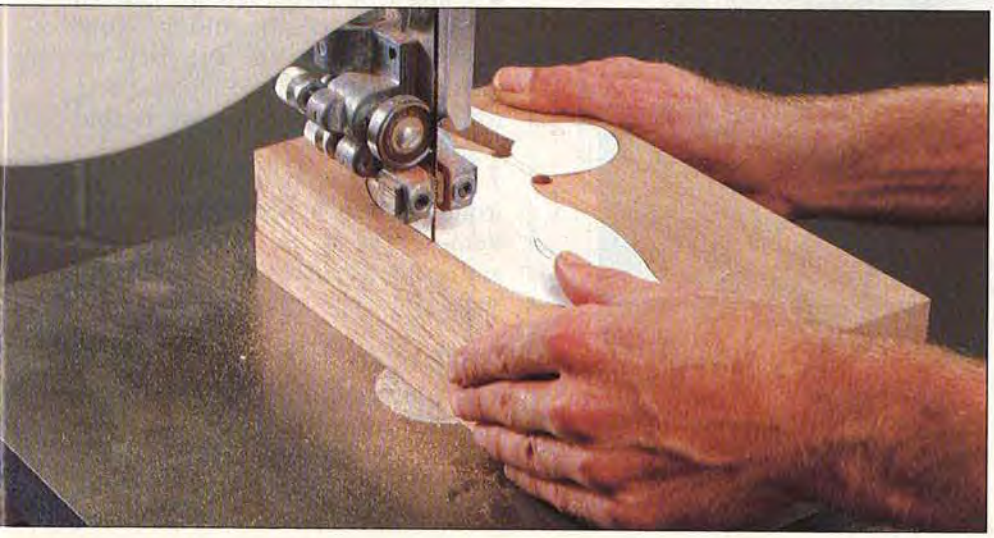
To cut the arc, steady the trammel point very firmly in the pivot hole with one hand while pivoting the stock slowly through the saw with the other hand, as shown in the photo (*above left*).

Additional Tip: *You can extend the height of the backer strip to stack-cut duplicate parts. See the stack-cutting procedure* below.









To cut sharp curves with a wide blade, first make a series of *relief cuts* as shown on the drawings *at left*, or drill turning holes as shown in the photo *at left*. Relief cuts allow the waste wood to break away as you cut so the blade doesn't get trapped in a tight curve; turning holes allow room for the blade when stock rotates.

When making large cutouts, plan the route of the cut in advance so the piece clears the back column of the saw as you work.

By Jim Barrett and James R. Downing
Photographs: Bob Calmer
Illustrations: Bill Zaun

We Know You Can Build the Block...

Test your family's and friend's ingenuity again and again with this laminated-puzzle block. And when displayed, you'll also have an unusual conversational piece to admire.

Keep the puzzle pieces in the block as shown *above*, or display them on dowels as shown at *right*.

MAKING AND CUTTING THE LAMINATION

1 Cut two ¾" oak pieces (A), two ¾" walnut pieces (B), and one ½" cherry piece (C) to the sizes listed in the Bill of Materials. (You can use other scraps you have at hand to form the lamination.)

2 Glue and clamp the pieces together in the configuration shown in the Band-Saw Pattern on the *opposite page,* keeping the edges flush.

3 Scrape off any excess glue, and sand the block smooth. Also, sand a slight round-over on all edges.

4 Using carbon paper, transfer the full-sized Band-Saw Pattern onto *two* pieces of paper measuring 3½x4" each. Apply spray adhesive to the back of the paper patterns and stick them onto two *adjoining* sides of the laminated block.

5 Drill a ¼" hole where shown on the pattern. Drill completely through the block, backing with stock to prevent chip-out. Turn the block to the other pattern, and drill the second ¼" hole completely through the block. (These holes provide a turn-around point for the band-saw blade when cutting the patterns in the next step.)

6 Using a ⅛" blade, saw the pattern on one side of the block. Now, tape the block so the cut parts remain in position in the block. Then, rotate the block and cut the second pattern.

7 Remove the patterns and tape from the block and block pieces. Remove the parts from the block and sand all sharp edges and cut surfaces on the pieces smooth.

READYING FOR DISPLAY

1 If you wish to display the puzzle pieces above the block as we do in the photo, drill seven ¼" holes in the top of the block where shown in the drawing at *right* (draw diagonals

from corner to corner to locate the center hole).

2 Cut the ¼" dowels to the lengths and quantity specified in the Supplies listing. Sand a slight taper on the ends of each dowel for easy insertion into the holes in the top of the block.

3 Position a ¼" dowel in each of the ¼" holes in the top of the block. Place the longest dowel in the center; the rest can be arranged in any order you wish.

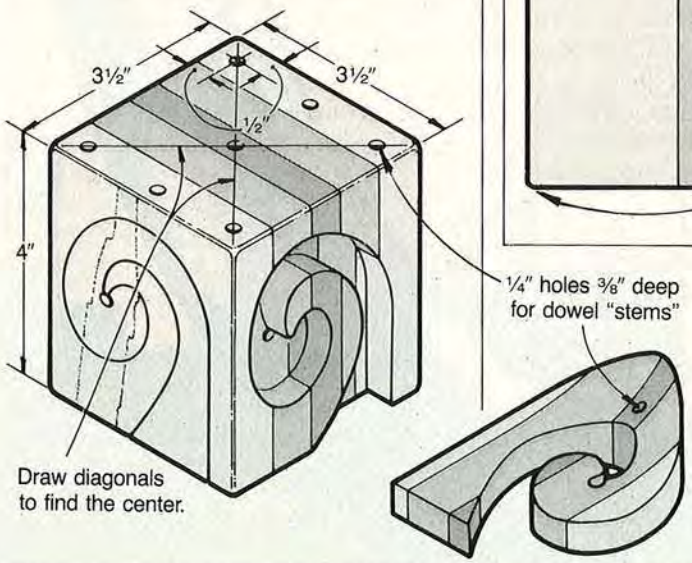
4 Drill a ¼" hole ⅜" deep in each puzzle piece for mounting on the dowels. (One at a time, we would hold a block piece on top of a dowel and decide on the best position to drill the hole. Also, drill these holes only on the surfaces cut with the band saw so they will not be visible when you assemble the block.)

5 Finish as desired. (We applied two coats of spray-on polyurethane varnish. The aerosol applicator makes it easier to cover all surfaces of the odd-shaped parts.)

Bill of Materials

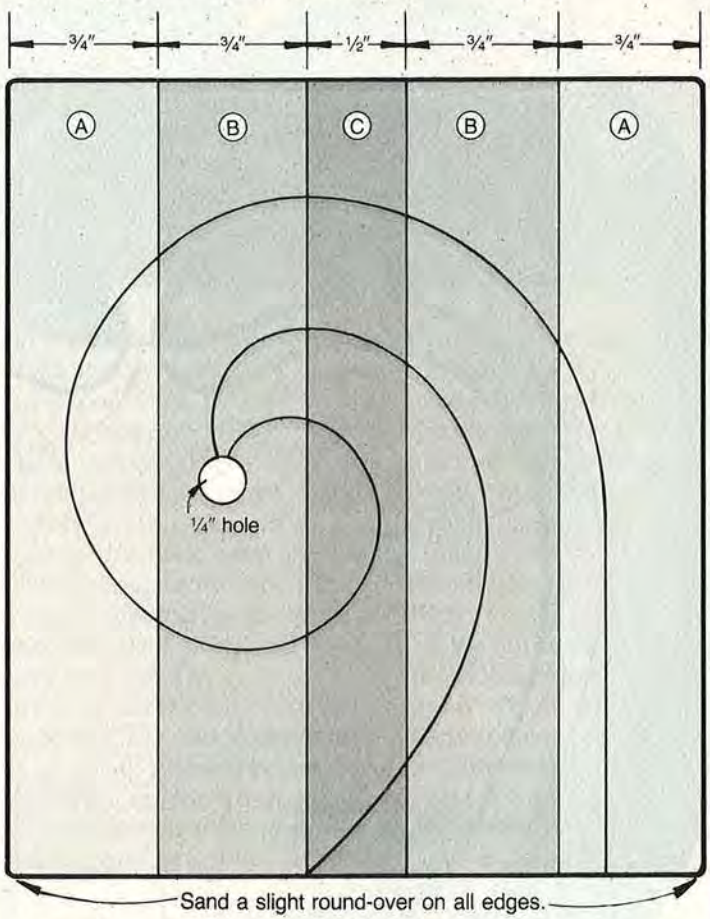
Part	Finished Size T	W	L	Material	Qty.
A	¾"	3½"	4"	oak	2
B	¾"	3½"	4"	walnut	2
C	½"	3½"	4"	cherry	1

Supplies: Paper for pattern, carbon paper, spray adhesive, finish, ¼" dowel stems: one each at 2½", 6", and 7", two each at 3½" and 5"



...Now, Can You Solve the Puzzle?

BANDSAW PATTERN (Full Size)

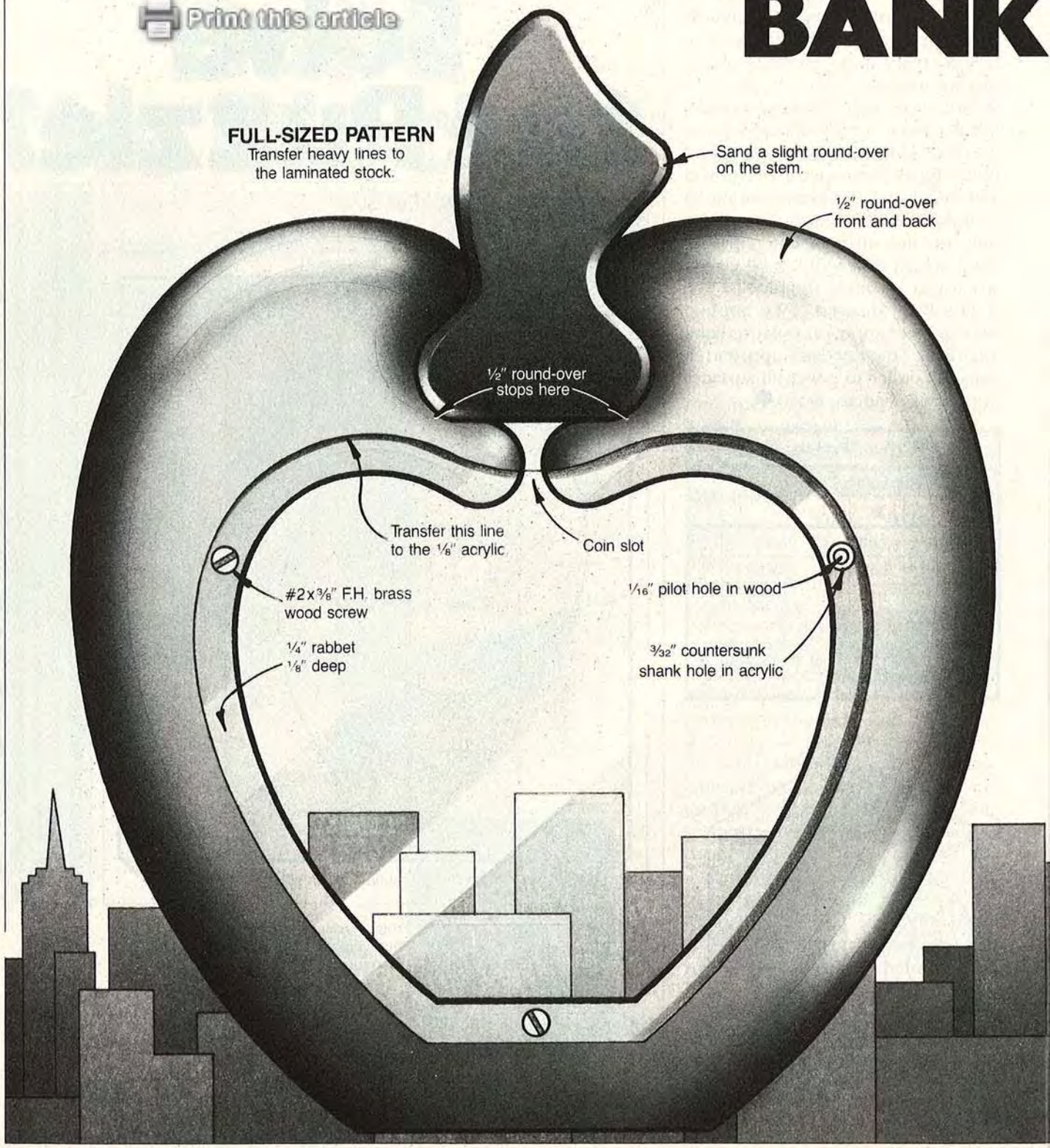


SOLVING THE PUZZLE: Test your ingenuity by putting all the pieces back into the block. (To figure out how the pieces went back together, we first assembled the block without the two small pieces. Once that was figured out, we removed all the pieces from the block, added the two small pieces, and reassembled the block. (Actually, it is much easier to reassemble the block and pieces than to describe.)

Project Design: James B. Woodruff
Photographs: Hopkins Associates
Illustrations: Bill Zaun

THE "BIG APPLE" BANK

Print this article


FULL-SIZED PATTERN
Transfer heavy lines to the laminated stock.
Sand a slight round-over on the stem.
½" round-over front and back
½" round-over stops here
Transfer this line to the ⅛" acrylic
Coin slot
#2x⅜" F.H. brass wood screw
1/16" pilot hole in wood
¼" rabbet ⅛" deep
3/32" countersunk shank hole in acrylic

What better way to teach your youngsters thrifty habits than with their very own apple savings bank, where they can see the pennies piling up. You can build the bank with just a band saw and router, and you may not need to travel any further than your scrap box for the materials.

1 Cut two pieces of ¾" stock to 7x8" (we used clear birch). Glue and clamp the two pieces together face to face to make a 1½"-thick blank. Later, after the glue dries, remove the clamps. Crosscut or plane the bottom edge of the blank to obtain a perfectly flat base.

2 Using carbon paper, transfer the full-sized apple and stem patterns to the laminated stock (don't forget the outline of the apple cavity).

3 Fit your band saw with a ⅛" blade, and cut the outside outline of the apple and stem to shape. Remove the stem and cut the apple cavity to shape. Sand the cut edges of both pieces smooth to remove all saw marks.

4 Rout a ¼" rabbet ⅛" deep along the inside edge of the apple where shown in the drawing. (If you use a different size rabbeting bit, keep the ⅛" depth the same, and adjust the size of the acrylic to fit the rabbeted opening.) Repeat the rabbeting procedure on the other face of the apple.

5 Rout a ½" round-over along the outside edges of the apple, stopping short of the coin slot where shown on the drawing. Sand a slight round-over along the edges of the stem, and finish-sand the pieces.

6 Again using carbon paper, transfer the full-sized acrylic pattern onto a piece of paper. Stick two pieces of 5x5" acrylic together with double-faced tape. Spray adhesive on the back of the pattern, and then stick it to the acrylic. Cut the acrylic to shape using the band saw and ⅛" blade. Now, separate the two pieces of acrylic. Test-fit each in the rabbet, and sand the edges of the acrylic if necessary for a good fit.

7 Position an acrylic piece in each rabbet. Now, drill and countersink three 3/32" shank holes through the acrylic and just into the wood. Switch to a 1/16" bit and drill a ¼"-deep pilot hole in the center of each 3/32" hole.

8 Apply a coat of sanding sealer to the apple body and stem. Lightly hand-sand, and then paint the apple red and the stem green. To hold the pieces while painting, drill ¼" holes in the bottom of each apple part and two in a piece of plywood scrap. Mount each apple piece on an 8" length of ¼" dowel stock; then spray with a coat of gloss enamel.

(We stuck the dowel "handles" in the holes in the plywood until the paint dried, and later applied a second coat.)

9 Fasten each acrylic panel in position in the ¼" rabbet, on front and back, with three #2x⅜" flathead brass wood screws.

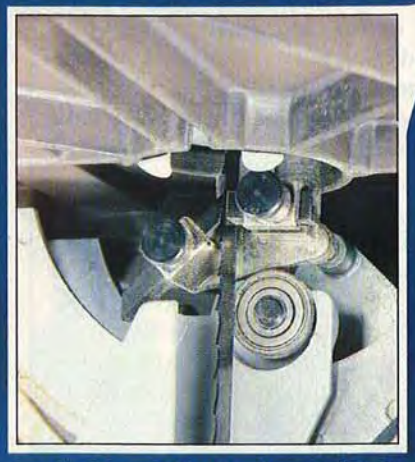
BUYING GUIDE

●**Rabbeting bit.** ¼" flute length, ¼"-diam. shank, catalog no. RB414, $25.50. Woodcraft Tools USA, P.O. Box 60906, Sacramento, CA 95860, or call 916/363-9428.

Project Design: Tom Lewis
Photograph: Hopkins Associates
Illustration: Greg Roberts

BAND SAWS:

Not all band saws look like the Inca 340 pictured here, but the basic parts remain the same. On this saw, the motor is connected to the lower drive wheel on the backside of the saw. Use this photo to help identify the parts as you read this article.



On the Inca 340, the *lower blade guide assembly* looks just like the upper one: it has two guide blocks and a bearing roller behind blade.

FINDING ONE THAT'S RIGHT FOR YOU

ANATOMY OF A BAND SAW

Large or small, two-wheel or three-wheel, all band saws work essentially the same way. A long, flexible, welded-steel *blade* travels on *wheels* supported by a rigid *frame.* Most two-wheel saws have separate *wheel housings* with removable covers so you can change blades. Most three-wheelers, and a few two-wheelers, such as the Inca 340 pictured at left, have a one-piece housing for wheels and blade.

The *motor* drives one of the wheels (drive wheel), either directly off the motor shaft (direct drive) or by means of a belt and pulley system (belt drive).

You adjust the other wheel to control blade tension and tracking with *tensioning* and *wheel tilt* knobs or handles.

Blade guide assemblies located above and beneath the saw table brace and stabilize the flexible blade as you saw. Each adjustable assembly has a *guide block* on either side of the blade to prevent sideways movement, and a *ball-bearing roller guide* behind the blade to prevent backward movement as you feed the stock into the blade. You can raise or lower the *upper guide assembly* (along with the *front blade guard*) to accommodate stock of different thicknesses.

On most band saws, the *table* tilts 45° to the right (as you face the blade teeth); some also tilt up to 10° to the left. A removable *throat plate* or *table insert* covers the hole or slot where the blade passes through the table.

The photo at left shows the workings of a typical two-wheeler (the Inca 340). For an inside view of a three-wheeler, see the Delta 16" band saw (model 28560) pictured on page 52.

From intricate scrollwork to resawing timbers, today's band saws can do an amazing number of cutting chores. But with all the sizes, designs, features, and options available, choosing just the right one can be tough. We've taken a close look at 11 different saws — each under our $1,000 retail price cutoff — to help you choose a band saw that will do what *you* want it to.

HOW MUCH BAND SAW DO YOU NEED?

The answer to this question depends almost entirely on what kind of work you want to do with the saw. Any machine will cut an occasional curve in a piece of 1" stock, for example. But what if you want to cut thick carving blocks, large panels, or intricate curves, resaw wide boards, or any number of other tasks? Then, a band saw's *throat capacity, cutting depth,* and *blade-size adaptability* become important factors in your choice.

The larger the throat, the wider the cut

The widest cut you can make on a band saw equals the distance between the blade and saw frame (column), or its *throat capacity.*

Of the saws we looked at, the Woodmaster 500 has the largest throat capacity (24½"), perfect for working with large sheet materials (see photo *below left*).

At 24½", the Woodmaster Model 500 has the deepest throat capacity of all saws we reviewed. *Above,* we're using it to scallop the edge of a 2'-wide panel. Optional table extenders made it a one-man job.

Cutting depth: Most saws have more than enough

The saw's *cutting depth,* measured from the table to the upper guide assembly (at its highest position), determines the maximum thickness of wood you can cut. Cutting heights range from 3" or 4" on the smallest models, to over 7½" on the largest ones. The Delta, AMT, and Jet 14" two-wheel saws have optional riser blocks to extend the cutting height to about 12". On the saws we looked at, power and cutting depth are well matched.

More blade sizes mean greater versatility

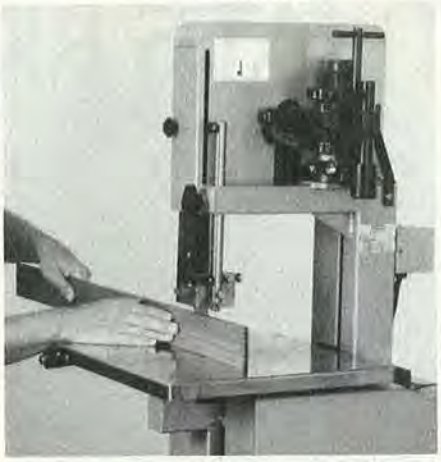
Simply put, saws that accept a wide range of blade sizes can make a broad range of cuts, more accurately, than ones that take only a few. Most band saws handle blades from ⅛" to ¾" wide — sufficient for most of the cutting jobs you'd normally want to do on a band saw. For the most accurate cuts, always use the widest possible blade that can saw for the radius of the curve you'll be cutting. A chart on page 44 shows the minimum radius of the curves you can cut with various-size blades.

If you plan to do resawing on the band saw, you may want a saw that takes blades 1½" or wider, such as the Grizzley G1131, Sears 2439, and Royobi BS50N (see photo *page 52*). The Royobi is

Continued

actually a resawing machine designed to take narrower band saw blades. However, its table doesn't tilt.

At the narrow end of the blade spectrum, the Inca 340 (see photo *right*) has an optional blade guide assembly that takes a very thin, 1/16" blade. It can do much of the work of a scroll saw, except inside cuts. But unlike a scroll saw, which can only cut stock up to 2" thick, the Inca does intricate cutting in stock up to 6" thick. This opens up exciting possibilities if you're interested in unique scrollwork projects.



Above: **Inca solved the puzzle of fitting a 1/16"-wide blade in a band saw. A special grooved roller guide replaces the standard roller bearing.** ***Right:*** **The Royobi BS-50N comes equipped with a 2"-wide blade to accurately resaw boards up to 7" wide; takes blades down to 1/4".**

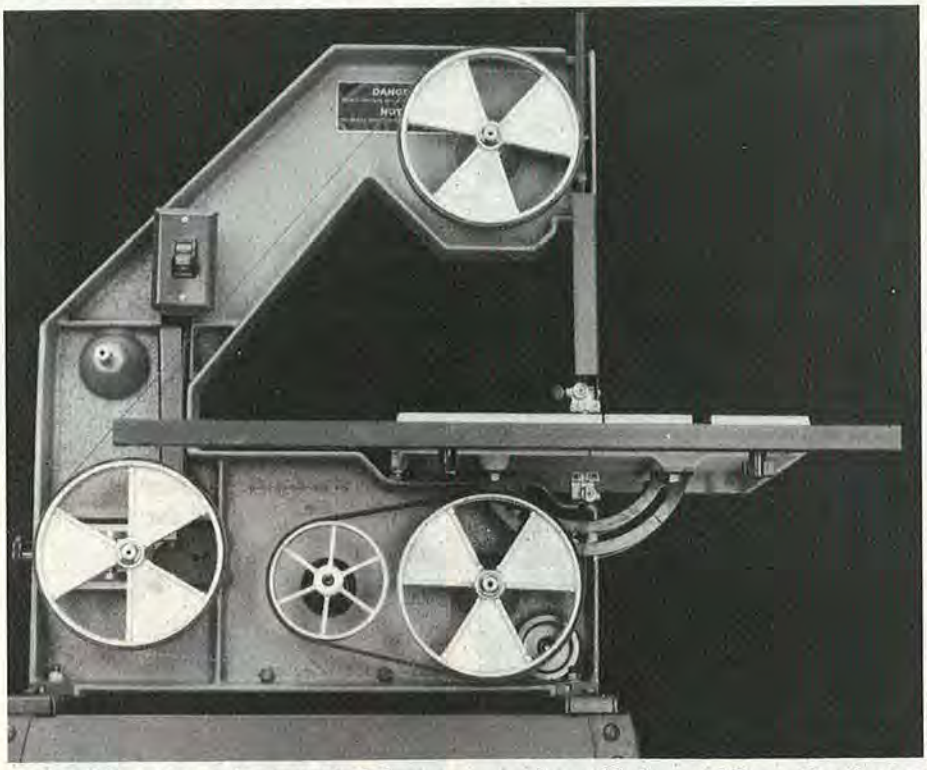
CHOOSING THE RIGHT SIZE SAW FOR YOUR SHOP

First, decide whether you want a *bench-top* model or a larger *stationary* machine. If you're short on shop space, as many of us are, you may prefer a compact bench-top unit. Many of the less expensive bench-top band saws tend to be lightweight "hobbyist" machines. But these "under $200" units will give adequate results if you limit them to light, occasional use. But don't expect them to perform like the more expensive saws.

If you want a small, bench-top saw that performs like a pro, we suggest you look at the Inca 340, Royobi BS-50N, and the Sears 2439. They're heavy-duty saws in a small package.

If you want a more powerful saw with larger capacity, you'll need to go with a stationary machine. These usually require stands, though you may be able to mount the smaller units on a bench.

With the exception of the Woodmaster 500, the stationary saws we looked at take up about the same amount of *floor space,* give or take a few square feet. However, the amount of shop space you devote to your saw may depend more on the type of work you'll be doing on it than the physical dimensions of the saw. For instance, big saws such as the Woodmaster 500 and Grizzley G1131, need ample space around them, if you plan on using them for the large jobs they're designed to handle. See the chart on page 55 for overall dimensions.



Delta 16" band saw shows typical three-wheel construction, which allows more throat depth than two-wheel saws. You can lower blade speed for cutting ferrous metals by removing pulley and running a smaller belt directly off motor arbor.

Two- And Three-Wheel Saws: which is better?

This depends on the tradeoff you want to make — more throat capacity or longer blade life. The three-wheel design offers a greater throat capacity in relationship to the overall size and weight of the saw. However, the three-wheelers have somewhat of a reputation for breaking blades more frequently than the two-wheelers. Also, you'll find that the three-wheel saws usually take longer to adjust to get the blade tracking correctly.

Mini Max precision-balances their cast-iron band saw wheels by drilling holes in the rim. We found this saw runs smoother than all the others we tried.

Sturdy trunnions provide solid support for the heavy cast-iron table on the Grizzley 18″ saw. Tilting this saw's table is easier than you may think.

Small table extension attaches to front or either side of table on AMT 14″ saw. This saw also has optional riser block to extend cutting height to 12″.

WHAT TO LOOK FOR IN A QUALITY SAW

Motors: The driving force

All stationary saws and most bench-top units use induction motors. Several of the smaller bench top units use universal motors. Generally, the small size, high rpm, and limited brush life of universal motors make them more suitable for portable power tools than for larger machines.

Most of the saws we looked at have *totally enclosed, fan-cooled (TEFC) motors.* These motors hold up longer in a shop environment than motors with ventilated housings. If you buy a band saw without a motor, we suggest you equip it with a TEFC motor.

On the saws we looked at, motors ranged from ⅕ to 2½ hp. In all cases, we found the motors well matched to the saw's physical cutting capacities.

Wheels: The key to smooth, vibration-free operation

Most band saws use cast-iron or cast-aluminum wheels; some of the bench-top units have plastic wheels.

Wheels may be wheels, but the heavier cast-iron wheels develop more momentum than aluminum ones, and this helps keep the blade from bogging down when cutting.

Also, saws with heavy, well-balanced wheels run more smoothly, with less noise and vibration.

Wheel housings

These are usually stamped (sheet) steel or high-impact plastic. One exception: the cast-aluminum housing on the Inca, which forms part of the frame. On other saws, the housing attaches to the frame and does not add to its rigidity.

If you expect to be changing blades frequently, check to see how easily you can remove and replace the housing covers. You'll find some fasteners easier to work than others. Also make sure the covers attach squarely and snugly against the housing — a loose wheel housing adds to vibration and noise when operating the saw.

Frame — check rigidity

Think of the band saw's frame as its backbone — it has to support the two or three spinning wheels placed under tension by the blade. If the blade flexes or warps the frame, your cuts will suffer. To check frame rigidity, grasp a side of the table with one hand and push against the side of the top wheel cover with the other.

Band saws have frames of cast iron, cast aluminum, or steel. These materials make rigid frames if they're thick enough and the frame itself has a rigid design. On cast-iron and cast-aluminum frames, a ribbed design provides greater rigidity with minimal warp, and keeps weight down.

Tables: Are they easy to tilt?

Most band saw tables tilt 45° to the right; some also tilt up to 10° to the left. The Royobi's table doesn't tilt because it's primarily a resaw.

Check for smooth operation when tilting the table, and make sure the locking knobs on the trunnions hold the table firmly at any angle without having to apply too much pressure to them. We particularly liked the smooth operation of the heavy cast-iron table on the Grizzley, shown in the photo *left*. Its yoke-and-cradle trunnion design provides solid support for the table and positive locking.

Also check that the throat plate fits snugly and sits flush with the table surface. You don't want the work snagging on it while sawing or having the blade cut into it. We prefer plastic throat plates to metal ones because they're less likely to damage the blades should they hit it.

As saw tables go, those on band saws are relatively small — typically 12″-14″ square. For most band saw work, you won't need a table much larger than this. If you do, some band-saw manufacturers offer table extensions (see chart on page 55).

Continued

BAND SAWS Finding one that's right for you

Here are 10 of the 11 saws we tried out: 1. Elektra Beckum Model BAS 315/4 (12″), 2. AMT Model 4112 (14″), 3. Grizzley Model G1131 (18″), 4. Inca Model 340 (10½″), 5. Royobi Model BS-50N (9¼″).

6. Mini Max Professional 32, Model P 32 (12″), 7. Delta Motorized Band Saw (three wheel) Model 28-560 (16″), 8. Delta Model 28243 (14″), 9. Skil Model 3104 (10″), 10. Delta Motorized Band Saw Model 28-160 (10″).

OTHER DESIGN FEATURES TO CONSIDER

Blade adjustments

Band saws have more blade adjustments than any other saw you'll own. So, if you anticipate changing blades frequently, you'll appreciate having these mechanisms conveniently located and as easy to operate as possible.

Blade tension and tracking adjustments have large knobs or levers protuding through the wheel housing. You shouldn't have to apply a lot of muscle to turn them — just make sure they operate smoothly and easily.

Saws with built-in blade-tension indicators help take the guesswork out of tensioning the blade. We like those with scales indicating correct tension for the blade width, such as the one used on the Delta saws. Saws without tension indicators require some trial-and-error adjusting until you get used to the saw.

Blade guide assemblies should be easy to get to for adjustment. In some cases you have to remove the throat plate to gain access to the lower guide assembly.

Above: **Microadjustments on Delta 14″ saw provide precision control on roller guides and guide-assembly carriage.**

Right: **Removable switch toggle prevents accidental starting of saw — a good feature when young folks visit your shop.**

On most saws, you'll need a wrench to adjust the guide blocks. We like the knurled knobs on the Inca's guide-block adjustments because they allow you to adjust the guide blocks easily by hand — without a wrench (see photo on page 50). We also like micro-adjustment knobs for the ball-bearing roller guides and guide-assembly carriage, like those shown in the photo *above.* They allow you to "fine-tune" the guides.

Switches: Safety first

We like to have a switch within easy reach from the saw operator's position. Then, if you have to turn off the saw in a hurry, such as when a blade breaks, you can do it. Also, you shouldn't have to reach across the saw to turn it off.

Some of the Delta saws and the Skil 3104 have removable switch toggles so you can lock the switch in the *OFF* position when the saw's not in use (see photo *above*).

BAND SAW BUYMANSHIP

MANUFACTURER	MODEL	TYPE[1]	NOMINAL SIZE	THROAT CAPACITY	CUTTING HEIGHT	BLADE WIDTHS	WHEELS			TABLE			POWER TRAIN				FRAME MATERIAL[7]	HEIGHT[8]	WIDTH	DEPTH	ACCESSORIES[9]		WEIGHT	SUGGESTED[10] RETAIL
							NUMBER	MATERIAL[2]	BEARINGS[3]	SIZE	TILT	MATERIAL[4]	VOLTS	HORSEPOWER	DRIVE[5]	BLADE SPEED (SFPM)[6]					STANDARD	OPTIONAL		
AMT[11]	4112	S	14"	13¾"	6"	⅛"-¾"	2	A	B	14"x14"	45°R	CI	115	¾	BP	3,000	CI	66"	22"	25"	S	F,M,E	163	$348
Black & Decker	9422	B	7½"	7½"	3¾"	⅛"-¾"	2	P	S	10"x10"	45°R	FS	120	⅓	BP	650	CI	36"	10"	16"	M,MR	—	27	$100
Delta	28160	B	10"	12"	4"	⅛"-⅜"	3	CA	B	11½"x11½"	45°R	CA	115	⅓	D	2,700	CA	22 7/16"	12 13/16"	23¼"	M,MR	—	40.5	$158
Delta	28560	S	16"	16"	8"	⅛"-¾"	3	CA	B	16"x16"	3°L 45°R	CI	115	½	BP	450, 2,400	CI	60⅝"	31"	21"	S,F, MR,M	—	156	$467
Delta[12]	28243	S	14"	13¾"	6¼"	⅛"-¾"	2	CA	B	14"x14"	10°L 45°R	CI	SPECIFIES ½-¾ hp		BP	3,000	CI	65½"	25"	17½"	S	MR,F, M	174	$621
Elektra Beckum	BAS 315/4	S	—	12¼"	6¾"	3/16"-¾"	2	CA	B	14¼"x15¾"	45°R	CA	220	2.4	D	3,082	S	74"	24"	23"	F,S MR	M,CC, SA,E	121	$895
Foley Belsaw	480	S	14"	14⅛"	6"	to ⅜"	2	CA	B	13¾"x13¾"	45°R	CI	115	½	BP	2,500	CA	66½"	28½"	25½"	F,M, MR	—	158	$700
General	490	S	15"	14¾"	6¾"	to ¾"	2	CI	B	15"x15"	10°L 45°R	CI	SPECIFIES ½-1½ hp		BP	3,000	CI	66½"	18"	26¾"	S	F,M, MR	295	$692
Grizzley[13]	G1131	S	18"	18⅛"	7⅞"	¼"-1½"	2	CA	B	15"x15"	10°L 45°R	CI	110/220	2	BP	650	CI	68½"	35"	20"	MR,F	M	360	$595
Inca[14]	340	B	10½"	10½"	6"	¼"-½"	2	CA	B,N	12½"x12½"	45°R	AA	110	¾	D	3,281	CA	35"	23"	18"	F,MR	S,M, SA,CC	55	$695
Jet	DBS14	B	14"	14"	5"	¼"-⅜"	3	CA	B	15¾"x15¾"	45°R	CA	115/230	½	BP	4,650 3,000 637	S	28"	17½"	28¾"	M,MR, F,SA, CC	—	56	$202.65
Jet	DBS12	B	12"	12"	4⅝"	⅛"-⅜"	3	P	S	13½"x13½"	45°R	CA	115	¾	G	0-2645	CA	22⅜"	24½"	13½"	M,F SA,MR	—	29	$183.75
Jet[15]	JBS14MW	S	14"	13⅝"	6"	⅛"-¾"	2	CA	B	14"x14"	45°R 10°L	CI	115/230	1	BP	2,350 1,470 735	S	65½"	24½"	19¼"	M,MR	—	211	$390.60
Mini Max	PRO 32	S	12½"	12⅜"	6½"	⅛"-¾"	2	CI	B	15"x15"	45°R	CI	115	¾	D	3,000	S	39"	22.8"	21.2"	S,MR F	M	147	$615
Royobi[16]	BS-50N	B	—	9¼"	7"	¼"-2"	2	CA	B	15¾"x15¾"	NO	SS	120	2½	BP	1,308	S	34⅝"	25 3/16"	17¾"	MR,F	—	110	$1,249*
Sears	24331	S	12"	12"	6"	⅛"-½"	2	CA	B	14"x12½"	45°R	CA	120	½	BP	2,800	CA	36"	24"	14 3/16"	S,SA, MR	M,CC, E	120	$439.99
Sears	24447	S	10"	10"	4"	¼"-⅜"	2	CA	B	14"x12½"	45°R	CA	120	⅓	D	3,700	S	34¾"	22½"	14½"	MR,S	CC	70	$279.99
Sears	24451	B	10"	10"	3"	¼"	3	CA	B	11½"x11½"	45°R	AA	120	⅕	D	1,700	CA	23"	13½"	22"	MR	S,M	45	$109.99
Skil[17]	3104	B	10"	10"	4"	⅛"-½"	3	P	S	14"x13"	45°R	CA	120	⅝	D	500-2,000	S	24¼"	24¼"	15"	F,MR, M	SA	32	$199.99
Woodmaster	500	S	24"	24½"	9"	⅛"-½"	3	CI	B	12"x12"	10°L 48°R	FS	SPECIFIES ½-¾ hp		BP	2,050 1,650 1,375	S	69½"	24"	35"	—	MR,F, E,S	165	$599

1 – (B) Bench top (S) Stationary

2 – (CI) Cast-iron (CA) Cast-aluminum (P) Plastic

3 – (B) Ball (S) Sleeve (N) Needle

4 – (CI) Cast-iron (CA) Cast-aluminum (AA) Anodized aluminum (SS) Stainless steel (P) Plastic (FS) Formed steel

5 – (D) Direct drive (BP) Belt and pulley

6 – Surface feet per minute

7 – (CI) Cast-iron (CA) Cast-aluminum (S) Steel

8 – Includes height of stand on stationary saws

9 – (F) Rip fence (MR) Motor (M) Miter gauge (E) Table extension (S) Stand (SA) Sanding attachment (CC) Circle-cutting attachment

10 – Most saws discounted 10-30% below suggested retail price

11 – Grizzley, Wilke offer similar saw

12 – Delta 28283 is same machine with ¾-hp motor, enclosed stand and work lamp

13 – Jet offers similar saw

14 – Inca 310 is same saw without motor; 320 is driven by electric drill

15 – Jepson offers similar saw

16 – Sears offers similar saw, equipped with ¾-hp induction motor

17 – Sears offers similar saw

*Suggested list price of Royobi BS-50N increased from $995 to $1,295 between time of writing and publication, but generally available for under $1,000 at retail outlets.

Rip fences and miter gauges: Do you really need them?

If you already have the appropriate saws for making rips, crosscuts, and angled cuts, the answer is "no." Even though rip fences and miter gauges come as standard or optional equipment on most band saws, the saw itself will not make a straight cut as accurately as a table saw, miter saw, or radial arm saw. However, you can get a reasonably straight cut on a band saw by using a pivot block, described on page 41. Also, band saws designed for resawing, such as the Royobi BS50N, do require an accurate fence.

Actually, we prefer to do our resawing on the table saw, with the help of our homemade jig. See the October, 1985 issue of *WOOD* (pgs. 44-47), for details.

Accessories add versatility

Optional band saw accessories include circle-cutting attachments, depth stops (for cutting mortise and tenon joints), belt-sanding attachments, worklights, attachments for dust collectors, table extensions, and roller supports for working with large stock. The chart *above* lists some of these. You'll also find some nifty accessories you can make for your band saw on pages 40-45 in this issue.

Produced with George Granseth
Photographs: Bob Calmer

ROUTER STRAIGHTEDGE
Makes dadoes and edge-jointing a snap

If you have ever put off building a project because it called for extra-long or tough-to-do dadoes, wait no more. Here comes our router straightedge to the rescue. You can make it in a few hours for under $10. And with it, you can just as easily rout one or a dozen dadoes, stopped or not. Plus, edge-jointing with your router also becomes a snap. So throw on your shop apron and safety glasses and let's head for the workshop!

Print this article

ASSEMBLING THE FENCE

Note: *The finished width of the base (A) will depend upon the size of the plastic subbase of your router and the size of straight bit used. As stated in the directions, we cut our base extra wide and then trimmed it to finished width later with a ¾" straight bit.*

1 From ½" plywood (we used 9-ply Baltic birch), rip and crosscut the base (A) and guide (B) to the sizes listed in the Bill of Materials. Keep the front edge of the guide perfectly straight, joint if necessary. When using later, the router slides along this edge and transfers any imperfections to the workpiece.

2 Cut or rout a ⅛" rabbet ⅛" deep along one edge of the guide piece. When using, this rabbet acts as a sawdust notch.

3 To lay out the 3/16" holes on the base, draw a line the length of the base 2" from what will be the back edge where shown in the drawing. Now, using a compass or dividers set at 2", step off and mark the hole locations on the base. Clamp a fence to your drill press and drill 3/16" holes through the plywood base where marked. Back the piece with scrap to prevent chip-out.

4 Countersink *every* 3/16" hole on the bottom side of the base to prevent the screwheads from scratching the piece being dadoed later.

5 Glue and clamp the guide piece to the base with the back edges and ends flush. Remove any glue squeeze-out from the sawdust notch before it dries. Sand the assembly smooth.

6 To trim the base to finished width, mount the straight bit you will use most often for routing dadoes (we used a ¾" bit) in your router. Clamp the base and guide assembly on the edge of your workbench, and rout ¼" into the plywood base (A). Check that the second cut won't hit your workbench, adjust the bit depth to cut all the way through, and finish routing through the base.

MAKING THE STOPS

1 Cut a piece of the same ½" material used for the base and guide to 4 x 10". Using the Stop Drawing at *right* as a guide, lay out the stop (C) outline and slot location onto the blank where shown in the photo *below*. Repeat for the other stop.

2 Drill a ¼" hole at each end of each marked slot.

3 Fit a ¼" straight bit in your table-mounted router. Now, clamp a fence to the router table so the *center* of the straight bit is ½" from the inside edge of the fence.

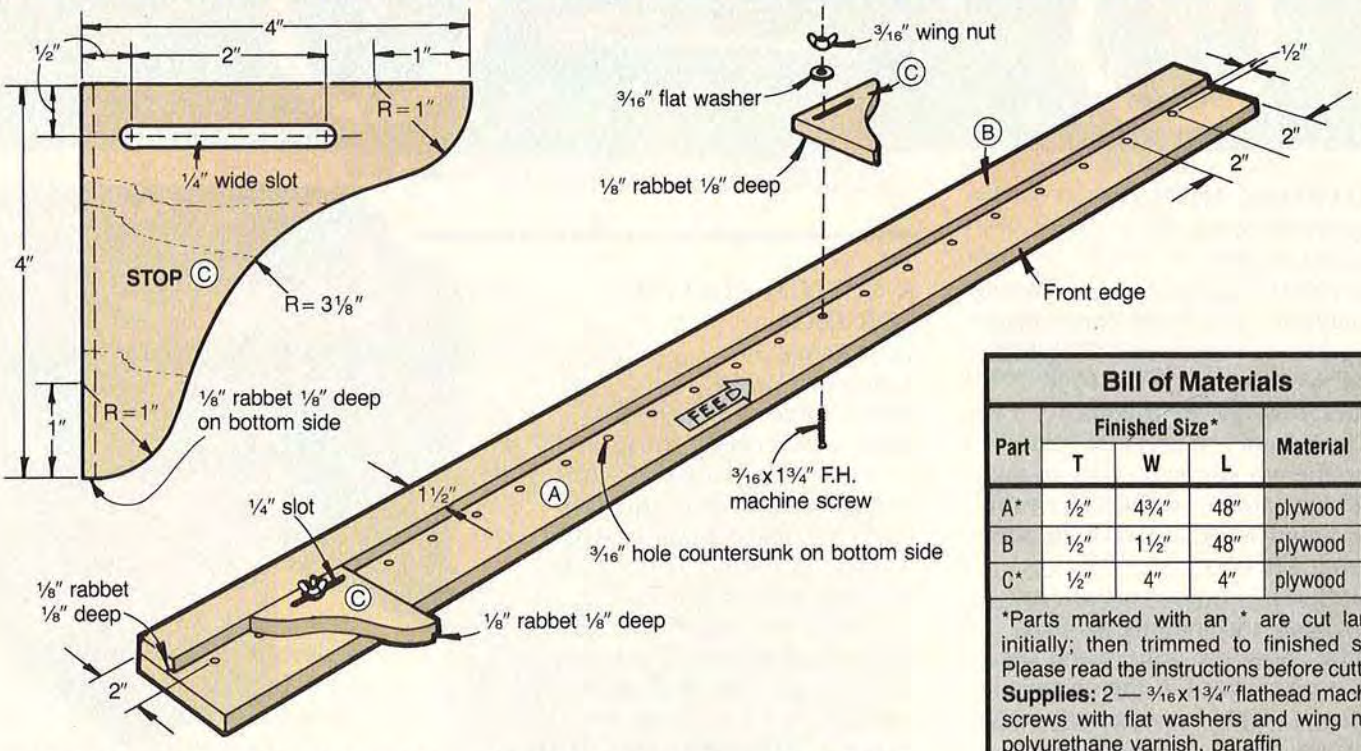
4 Position the stop blank against the fence with the router bit protruding through one of the ¼" holes in the blank. Holding the blank firmly against the fence with one hand, start the router with the other, and rout from hole to hole to form the slot as shown in the photo *lower left*. (In addition to using the ¼" holes as stop points, we also clamped a stop to the router table as shown in the photo.) Repeat this step to rout the slot in the second stop.

5 Cut or rout a ⅛" rabbet ⅛" deep along each end of the stop blank (see the Stop Drawing for location) to act as sawdust notches. Cut the stops to shape from the blank with a band saw or scroll saw. Sand both pieces smooth.

6 Apply the finish to the stops, base, and guide. Applying a small amount of paraffin to the top surface of the base helps the router slide more easily. Attach the stops to the straightedge with 3/16" flathead machine screws, washers, and wing nuts.

PUTTING THE STRAIGHTEDGE TO WORK

Start by laying out the location of the dadoes or stopped dadoes needed on the workpiece, and set the straight bit to the needed depth. With the router turned off, position it on the base, check the position of the straight bit against the marked dado, and clamp the straightedge in position. If you plan on cutting dadoes with the same straight bit used in step 6, position the front edge of the base directly on the inside line marking the dado. If using a larger or smaller bit, you will need to adjust the position of the straightedge accordingly. Holding the router firmly against the guide, start the router, and move it into the wood and along the guide to cut the dado. Move the router in the direction noted by the arrow on the Exploded-View Drawing.



Bill of Materials					
Part	Finished Size*			Material	Qty.
	T	W	L		
A*	½″	4¾″	48″	plywood	1
B	½″	1½″	48″	plywood	1
C*	½″	4″	4″	plywood	2

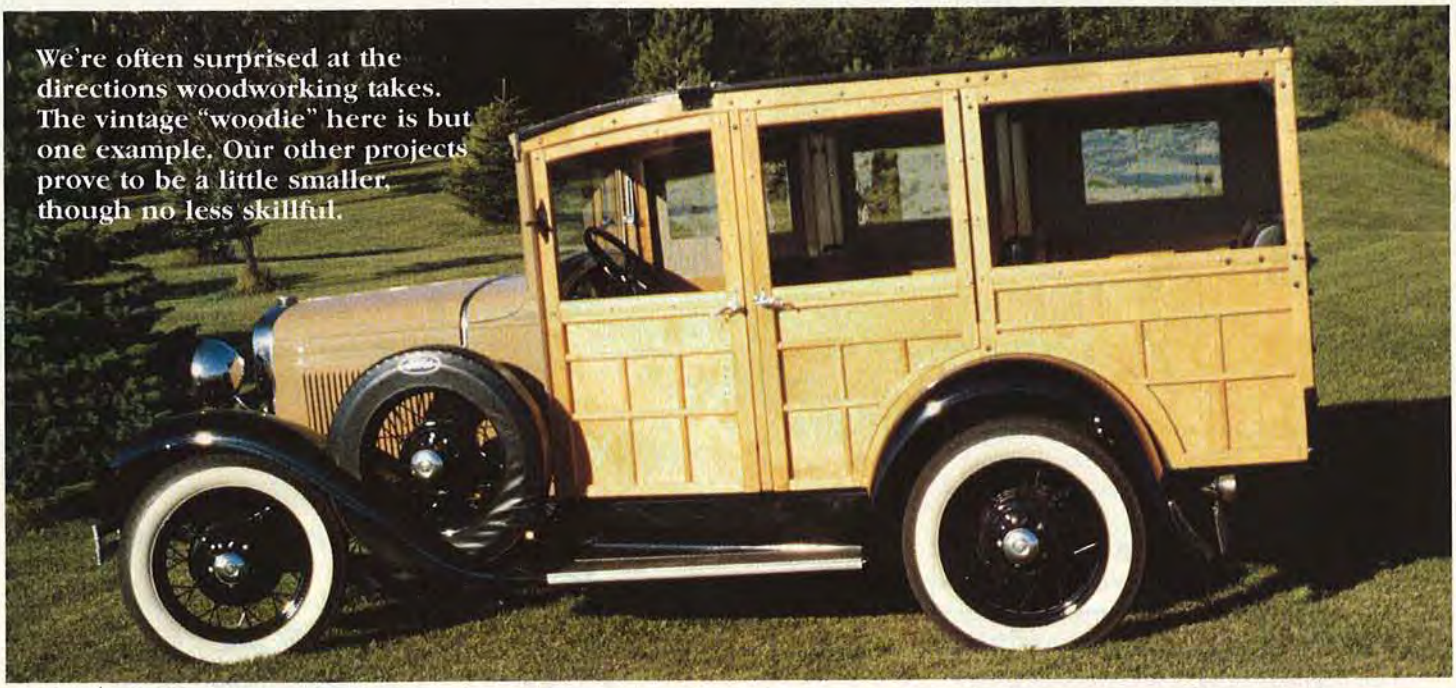
*Parts marked with an * are cut larger initially; then trimmed to finished size. Please read the instructions before cutting.
Supplies: 2 — 3/16x1¾″ flathead machine screws with flat washers and wing nuts, polyurethane varnish, paraffin

For stopped dadoes, determine the length of the dado needed, position the stops, and tighten the wing nuts to hold the stops to the base. Position the straightedge on the workpiece and clamp it in position. Hold the router subbase against the guide but at a slight angle so the bit does not contact the piece to be routed. Start and lower the router to gently "plunge" the bit into the workpiece. Push the router from one stop to the other to rout the stopped dado. If available, a plunge router works great for stopped dadoes.

If you don't have a jointer and need to **edge-joint** irregular boards, remove the stops and clamp the front edge of the straightedge to the board being straightened so a minimum of 1/16″ of the irregular edge protrudes the entire length of the board. Using a straight bit, rout the irregular edge of the board straight.

Project Design: James R. Downing; Jim Boelling
Photographs: Jim Kascoutas
Illustrations: Kim Downing; Bill Zaun

READERS, IT'S YOUR TURN! PROJECT



We're often surprised at the directions woodworking takes. The vintage "woodie" here is but one example. Our other projects prove to be a little smaller, though no less skillful.

TRAVELING IN STYLE

Gregory Thomas, 33
Manitowoc, Wis.
Apprentice commercial electrician

Though he's a diehard Chevy man, Greg couldn't resist restoring this Ford "woodie" wagon, a 1930 Model A owned by friends.

Three hundred and fifty hours later, the woodie was ready to take first place at auto shows. Her value rose significantly, too — with offers of over $20,000.

Greg used another woodie to copy body and framing patterns, and he chose the same wood species used by Ford in the original woodies: maple framing with birch plywood panels and birch strips across the top. Floorboards are white oak. All wood parts were glued and screwed together and the framing bolts to the chassis. Valspar gloss plastic coat gives the wood protection and a high shine.

With the woodie behind him, this craftsman is content to build an occasional dashboard — leaving more time for his '32 Chevy coupe.

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A CUSTOM ROLLTOP FOR DAD

Scott Keller, 25
Arlington, Va.
Cabinetmaker

Scott only recently became a cabinetmaker. His woodworking, though, goes back to the days when he tagged along to work with his bricklayer father and "helped" the carpenters.

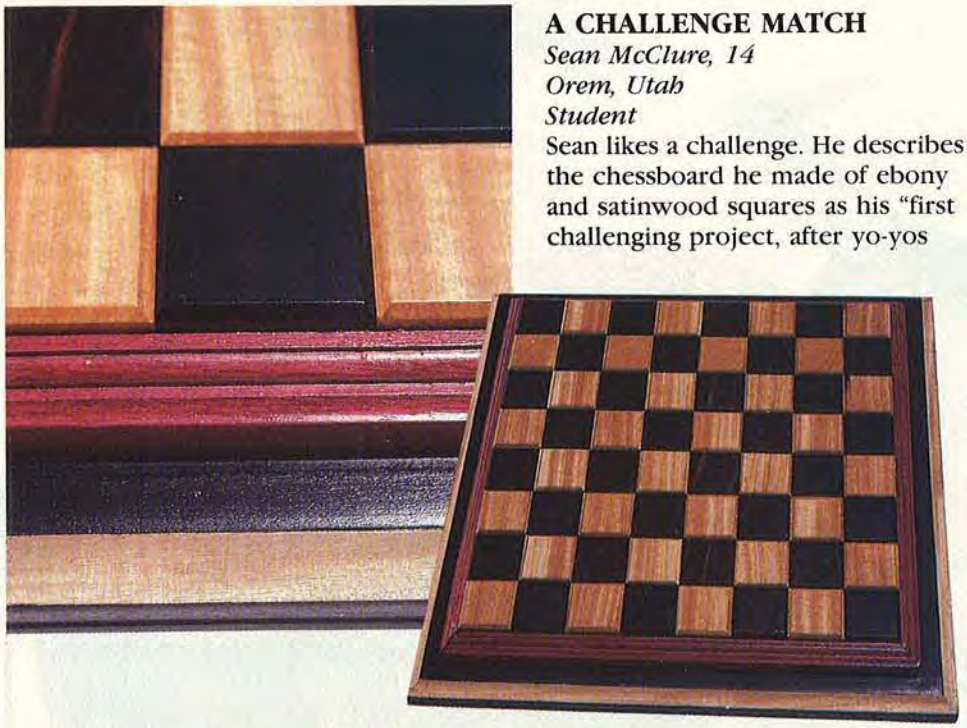
It turns out that Scott's father did himself a favor by bringing Scott along: This solid cherry rolltop desk was a gift from his son, who put 160 hours into it. Without plans, Scott simply measured another rolltop for basic dimensions. Then, he made a practical adjustment to the measurements.

While the model measured 45x47x30", Scott made his only 28" deep so that it could be moved through interior doorways. To make the mortise-and-tenon-jointed, 200-plus-lb. desk even more manageable, he built the top as a separate unit. And, he added a surprise: When the top rolls up, a switch depresses to turn on the desk light inside.

Scott applied a light coat of golden oak stain to pick up the grain. He finished the desk with seven coats of polyurethane.

A well-thought-out plan, Scott!

SHOWCASE



A CHALLENGE MATCH

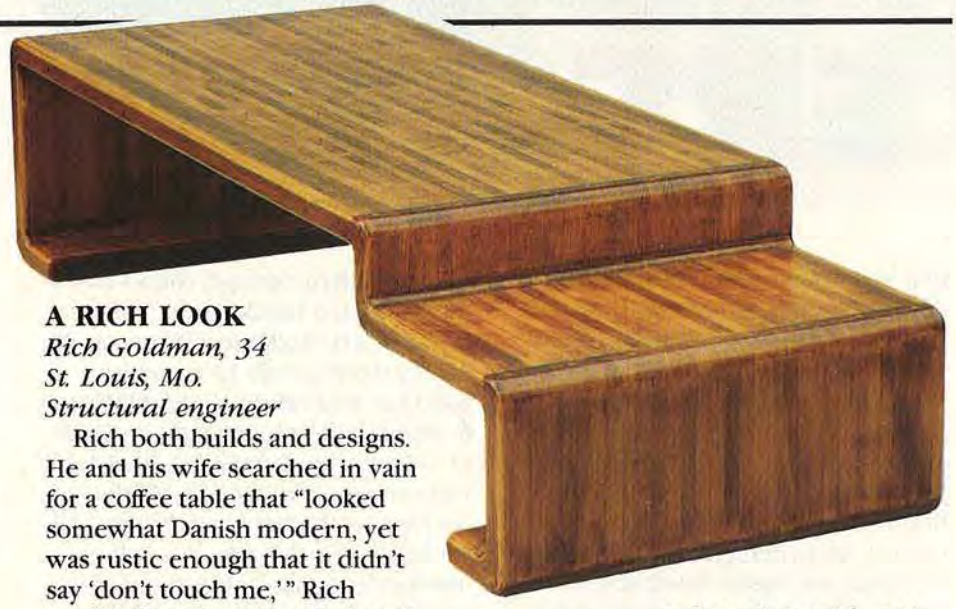
Sean McClure, 14
Orem, Utah
Student

Sean likes a challenge. He describes the chessboard he made of ebony and satinwood squares as his "first challenging project, after yo-yos and birdhouses." Because Sean plays tournament chess, the board fit his game plan perfectly.

Sean's woodworking interest comes naturally: His father is Paul McClure, wood technology consultant for *WOOD* Magazine. Dad helped Sean some, but only because the table saw was off-limits. Young McClure did the rest, and he told us precisely how. Sean even routed a V-groove between the squares, but says the moldings were the hardest:

"First, I routed the edges of a purpleheart board with Bosch's ½" classical bit. When I ripped the edges off, there were my moldings. Then, I made a rabbet in the back of the moldings, mitered the ends, and glued them to the board. After I put the purpleheart on, I made the ebony moldings exactly the same way, only I used Bosch's ½" cove bit. They went on the same way, too. To fill the cove in the ebony, I cut a strip of primavera veneer and glued it in."

Sean finished his board with three coats of clear Deft. We only hope his chess game continues to match his shop skills!



A RICH LOOK

Rich Goldman, 34
St. Louis, Mo.
Structural engineer

Rich both builds and designs. He and his wife searched in vain for a coffee table that "looked somewhat Danish modern, yet was rustic enough that it didn't say 'don't touch me,'" Rich recalls. Together, they designed this fluid-lined, butcher-block-style table measuring 60" long, 23" wide, and 16" and 12" high.

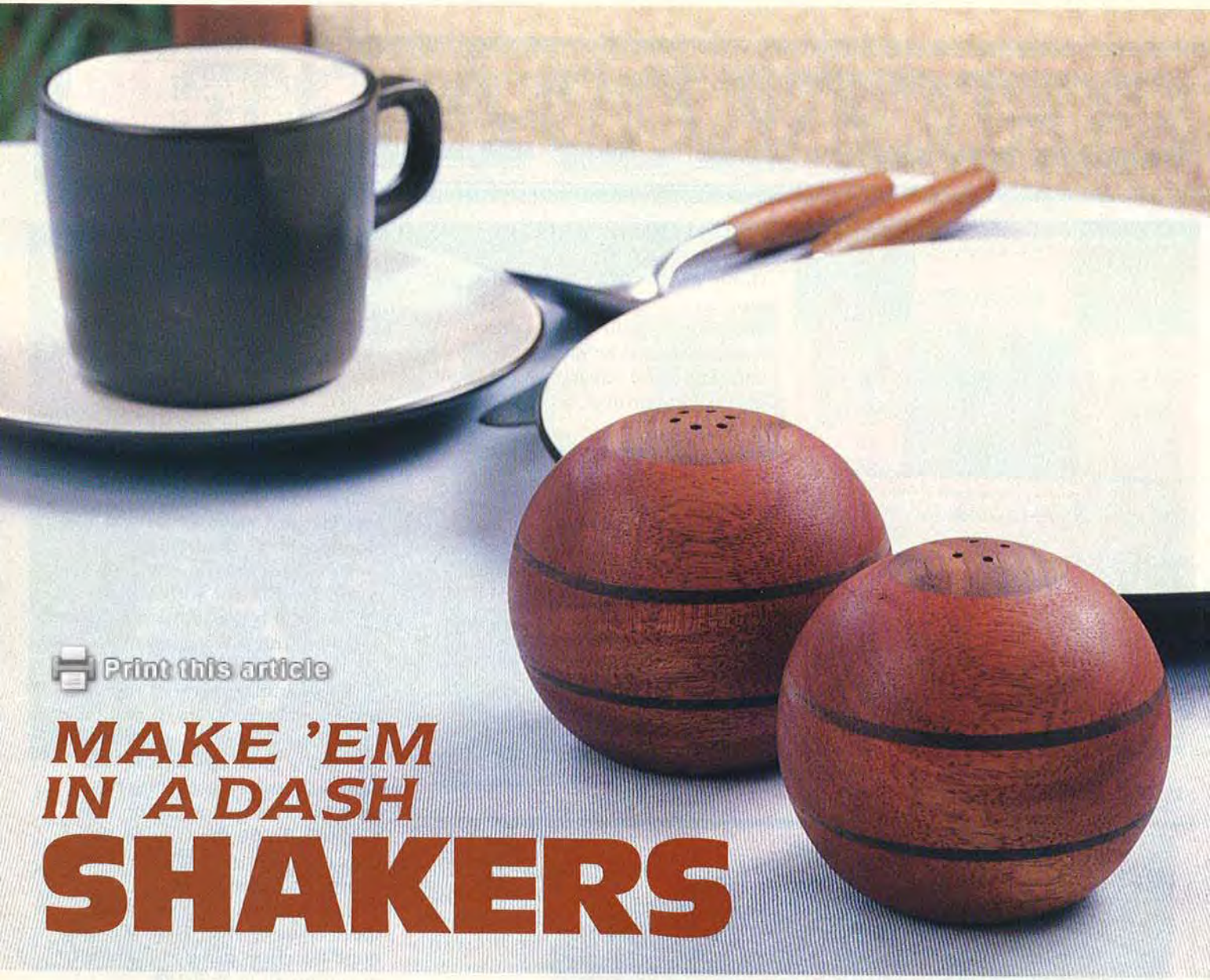
For an eye-catching effect, Rich alternated the grain of white pine strips (top grain, then edge grain). He stained the table walnut and, sanding with wet or dry paper between coats, applied satin-finish polyurethane.

Joints are ¾"x¾" tongue-and-groove. For load-bearing strength, this structural engineer used #8x1½" wood screws placed at 90° angles from each other.

TO SUBMIT YOUR PROJECTS...

Send a 35-mm color slide (no prints, please), with the project as the focal point and a simple background — no people. Include a capsule description — materials, special joinery, finish, and dimensions, for example. *WOOD* will pay $25 for published projects. Slides cannot be returned unless you enclose a self-addressed, stamped envelope.

Project Showcase
Better Homes and Gardens®
***WOOD* Magazine**
Locust at 17th
Des Moines, IA 50336



Print this article

MAKE 'EM IN A DASH
SHAKERS

Spice up somebody's table setting with these palm-sized mahogany and walnut shakers. They're nice to look at, nice to handle, and you can turn them out quicker than a wink.

1 Rip and crosscut parts A, B, and C to the size listed in the Bill of Materials. For part B you need ⅛" walnut stock. You can either resaw and sand thicker material to ⅛" or special-order (see the Buying Guide for our source).

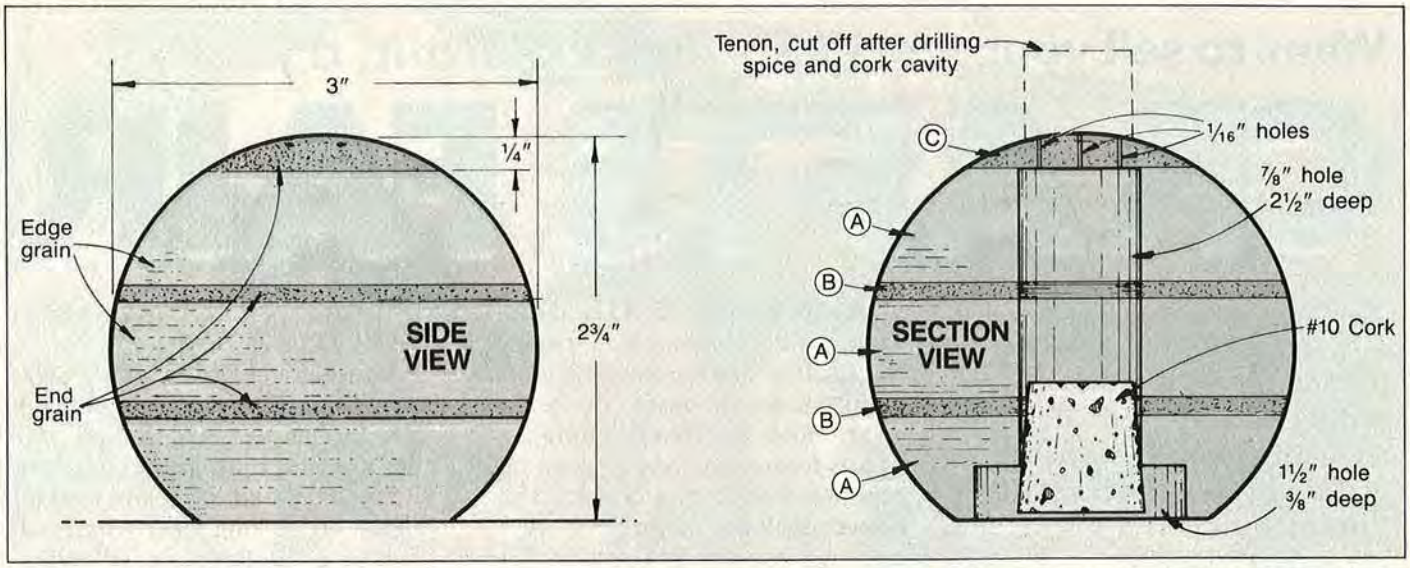
2 Using the Side-View Drawing as a reference, glue and clamp the walnut and mahogany pieces into two equal-size stacks, keeping the edges flush. We alternated the grain direction of each layer, as shown in the Side-View Drawing, for stability and eye appeal.

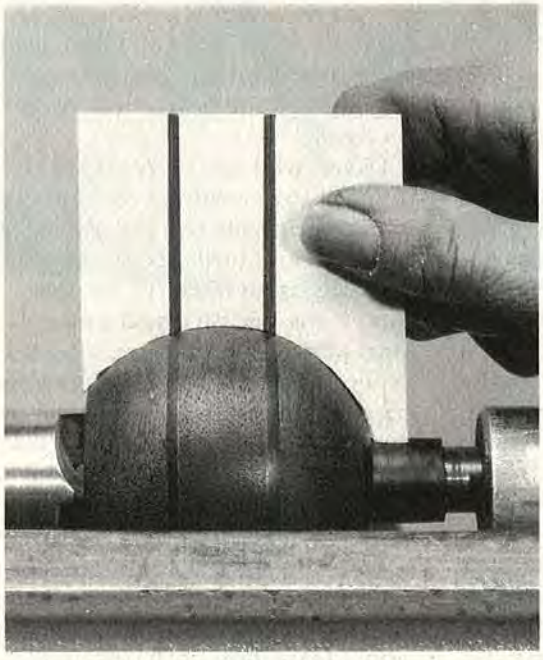
3 After the glue has dried, scrape off the excess. Find the center point on the top of each lamination by marking diagonals from corner to corner. (Although it's not essential, we used a band saw to cut the laminations to rough shape prior to turning them.)

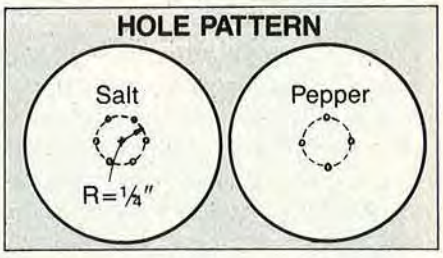
4 Mount one of the walnut and mahogany laminations on the lathe with the walnut against the tailstock. (We mounted each lamination between centers, as shown in the photo on the opposite page.)

5 Using a large gouge, round-down the laminated block to the largest cylinder size possible. (We started with a sharp gouge to ensure a good cut and minimal chipping.)

6 Bore a ¾" hole through a piece of ¾" scrap material (this board will serve as a mounting block later when the holes are being drilled in the shakers). Now, lay out the tenon (walnut end of the block) and turn it down to ¾" diameter with a parting tool. Check the diameter with a pair of outside calipers as you turn it down. At just a hair over ¾", stop the lathe, slide the tailstock and turned stock away from the live center, and check the fit of the







Bill of Materials
For Two Shakers

Part	Size T	Size W	Size L	Material	Qty.
A	3/4"	3 1/4"	3 1/4"	Honduras mahogany	6
B	1/8"	3 1/4"	3 1/4"	walnut	4
C	3/4"	3 1/4"	3 1/4"	walnut	2

Supplies: polyurethane, two #10 corks that taper from 1" to 3/4" (available at most hobby stores and some hardware stores)

tenon in the 3/4" hole you bored in the mounting block. Turn until the tenon fits snugly in the hole.

7 Using a piece of cardboard or hardboard and the Side-View Drawing as a reference, outline the profile of the finished shakers on it. Cut the profile template to shape.

8 Turn the stock down to about 1/16" over size, stopping the lathe periodically and checking the shape with the template as shown in photo *above*. (We marked lines on the template to correspond with the walnut stripes in the shaker for a more accurate contour.) Finish-sand the shaker to size.

9 Remove the shaker from the lathe and fit the tenon in the 3/4" hole in the mounting block. Center and clamp the shaker and mounting block to the drill press (see photo *above*). Using a 1 1/2" flat-bottomed bit (we used a Forstner), bore a recess 3/8" deep in the nearly completed shaker. Without moving the shaker and mounting block, change to a 7/8" flat-bottomed bit and drill to a depth of 2 1/2".

10 Remove the shaker from the mounting block and drill press, saw off the tenon, and sand the top end to shape. (When cutting the tenon off the end, we left on about 1/8" of the tenon, and then sanded the top to shape.)

11 Repeat steps 4 through 10 to fashion the other shaker.

12 Lay out the hole pattern on the top of each shaker and drill 1/16" holes (see the Hole-Pattern Drawing for help with this).

13 Apply several coats of finish, being careful not to clog the holes. (We finished ours with polyurethane to minimize the difference in color between end and edge grain.)

BUYING GUIDE

- 1/8" walnut. 1/8 x 5 1/2 x 18". $3.36, catalog no. W4601. Craftsman Wood Service, 1735 W. Cortland Ct., Addison, IL 60101 (312/629-3100).

Project Design: James R. Downing
Photographs: Hopkins Associates
Illustrations: Bill Zaun

Want to sell your work? For fun and profit, try a...

CRAFTS FAIR!

Many woodworkers finance their favorite pastime, as well as travel, by selling at crafts fairs. If that's something you've been dreaming about, here's the information you need to get started.

Compared to all other ways of selling, crafts fairs give you an opportunity to sell a lot of your work at one time for full price. When you throw in the extras — like travel and having fun meeting other craftspeople and viewing their work — it's easy to see why crafts fairs have become so popular.

Selling direct at crafts fairs also means meeting the public, and discovering first-hand what they think of your products — both the good aspects and the bad. There will be plenty of work involved too, in packing, transporting, unloading, setting up, selling, and tearing down. For all this, those who regularly sell at crafts fairs will tell you there's no guarantee of success. Yet, each year thousands of woodworkers and other craftspeople find crafts fairs just the ticket for selling their work, and they have fun, too.

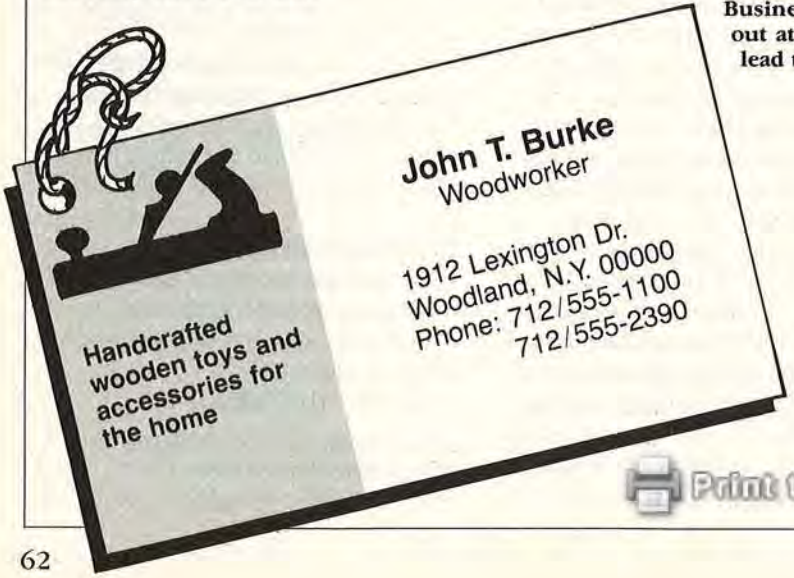
CRAFTS FAIRS OF ALL SIZES

Club and church bazaars represent the smallest and simplest type of crafts fair. At the other end lie the giant, three- and four-day-long events frequently held in posh metropolitan convention centers. In between fall the majority — the one- and two-day fairs usually held outdoors in summer, with anywhere from 25 to maybe 500 exhibiting craftspeople.

More and more shopping malls host fairs on weekends. (For sources that list these and other fairs, see the box at the end of this article.)

All crafts fairs fall into one of two categories: *juried* or *non-juried*. A juried fair has judges who review slides of your work and either accept or reject it for entry based on their criteria for craftsmanship, originality, and suitability for that particular fair. You need to submit entries to juried fairs months in advance, complete with a $10 to $25 non-refundable jury fee.

Most non-juried fairs operate on a first-come, first-served basis. Occasionally they'll set limits on the number of craftspeople selling any one media (wood, ceramics, prints, watercolors, or weaving).



Business cards passed out at crafts fairs can lead to future sales.

HOW TO SELECT A CRAFTS FAIR TO ATTEND

Because crafts fairs not only differ in size, location, and attendance, but also in management, amount of promotion, and type of clientele, there's no well-defined, tried-and-true technique for picking a fair where sales will be good. Experienced exhibitors, however, such as David DiZinno, of Wellington, Ohio, have developed working guidelines that help increase their chances of sales success.

David, who for 18 years has traveled to as many as 35 crafts fairs a year selling his wood mosaics, prefers to attend juried fairs. "These fairs emphasize quality," he says. "And if the fair isn't held in a cultural wasteland, the buyers come expecting to pay for it. Serious buyers usually want to see and talk to the artist or craftsperson who made the work. Size makes little difference. You can still make good money at a small crafts fair. It's the people attending that count."

Over the years, David says he has learned to spot the types of people who'll likely buy his work. "They look well-dressed, and typically ask intelligent questions."

Woodturner Cleat Christiansen, from Ogden, Utah, sells at 16 fairs a year from coast to coast. In the 4½ years he's been attending fairs, he's also come to limit himself to only juried fairs. "If you're going to travel any distance at all, you might as well go where the money is," he advises.

Even juried fairs prove chancey, though, since you can't count on being "juried in" from one year to the next. But, as Frank Garvelink, a Marcellus, Michigan woodworker says: "Crafts fairs are like the stock market; you learn to run with the blue chips." In his 12 years of marketing band-sawn baskets, he has sold at up to 30 crafts fairs a year.

Print this article

Although juried fairs seem to be preferred by many craftspeople, don't let that stop you from trying a non-juried fair. One, or several, might work for you.

Even with this advice under your belt, there are still hundreds of juried, and many non-juried, fairs to pick from. So where do you turn next? To fellow craftspeople and artists who regularly make their way around the crafts fair "circuit." Word-of-mouth recommendations from folks who have been to a good fair even helps out the pros.

"I talk to all kinds of crafts- men and -women — painter's, jewelers, potters. Anyone who does work in the same class or level as mine can tell me what I might expect at an untried fair," David tells us. "I might get 10 opinions, then take the consensus."

The monthly magazine, *Sunshine Artists U.S.A.,* lists hundreds of fairs by state (see source box at end of article) and provides additional information on entry fees, types of work featured, and where to write. It also rates recent fairs, tells what sold best, and gives pertinent comments of interest to exhibitors. The woodworkers we talked to rely on this reference to supplement their other information.

They also agree with these guidelines to use in selecting a crafts fair:

- Crafts fairs associated with celebrations and festivals often draw fun-seekers rather than buyers.
- Check a fair's pedigree. Local arts and crafts councils, civic organizations, or culturally related groups usually sponsor quality shows with a buying crowd.
- Shopping mall crafts fairs can bring in lots of traffic, but the hours (typically 10 a.m. to 9 p.m.) can be grueling. And, these fairs are usually held in the off-buying months of April and October, rather than during the summer or around major gift-giving holidays such as Mother's Day or Christmas.
- One-day fairs can be profitable, but you might as well choose a longer fair to make it worthwhile.
- Look for longevity. First-time fairs may be a gamble if you don't know the area's buying potential.
- Check out the economic climate where the fair will be held. A local industry layoff, for example, could mean less money for spending.

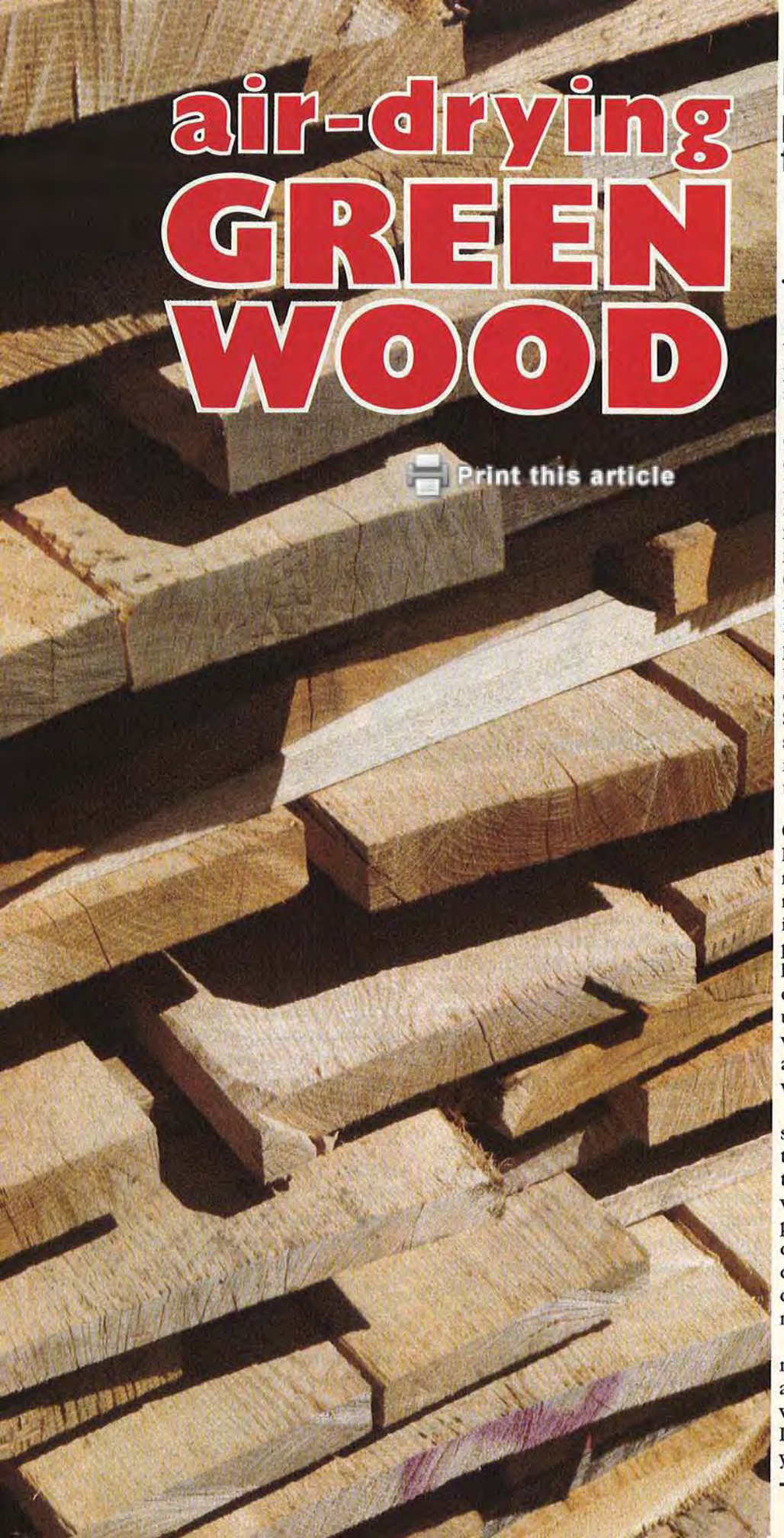
After you've done your homework, try visiting a few of the crafts fairs you'd like to enter in the future. You'll get a feel for the buying atmosphere, and actually see what's selling at the time. "Even then," remarks Cleat, "you won't know for sure that your things will sell until you do the show."

WHAT IT COSTS TO SELL YOUR WORK

Small bazaars normally charge only a token fee for a table, but expect to pay $50 to $75 for an 8x10′ or 10x10′ space at an average-sized, two-day crafts fair. Some will cost as much as twice that; others, less. As noted before, juried shows also charge a non-refundable jury fee to evaluate your products.

You'll need a booth or display with signs. For a first-time fair

Continued on page 86



air-drying GREEN WOOD

Print this article

Drying green wood with pile up with the lumber. from wood stock you've

Air-dry your own stock? Why not? Many woodworkers do and so can you.

If you harvest the wood and saw it yourself, all you'll have invested will be your time, labor, and pocket change — providing you already own the equipment.

You'll save at least 50 percent over the retail price of good, kiln-dried hardwood by buying green logs and having them custom-sawed at a mill for 15 to 30 cents a board foot. Even if you purchase green, fresh-sawed boards from the mill (at about 50 cents per board foot more), you'll come out ahead. And if you're patient, understand the principles, and adhere to time-tested technique, you'll have top-quality wood for your projects. Some craftsmen swear air-dried stock works better, and looks richer in color when made up, than the kiln-dried variety.

GREEN WOOD: HOW WET IT IS

Depending on the species, the moisture content of green wood normally ranges from 40 percent in heartwood to as much as 70 percent in sapwood. Once a tree has been felled, the wood starts drying out, and continues drying until its moisture content balances with the relative humidity of the air surrounding it. At this stage, we call it "seasoned."

But even seasoned wood, like a sponge, can absorb or lose moisture. Depending on the species, this may take a few days or a few weeks. A finish simply slows the process down. While you'll never completely prevent wood from changing its moisture content, you can control to some degree how much it fluctuates.

You want to dry the wood to a moisture content equal to the average relative humidity of the place where it will eventually be used. In most cases, that'll be inside your home.

Mother Nature's help alone takes time and effort, but your rewards Besides saving a bundle, you'll take extra pride in projects made processed yourself.

For most of us in the U.S., that means seasoned wood should have a working moisture content of about eight or nine percent: in very humid areas slightly higher; in dry parts of the country, slightly lower. You can call the nearest National Weather Service office for average relative humidity where you live. If your home is humidity-controlled, contact your local heating and cooling dealer for this information.

When naturally seasoned wood reaches the desired moisture content, it remains as stable as any other stock you've worked, provided it won't be subjected to extreme dryness or wetness.

BEFORE YOU BEGIN DRYING: TIPS FOR SOUND, SEASONED STOCK

Green wood shrinks as it dries. That's a fact you can't escape; but you *can* control the rate. Stress from too rapid moisture loss causes wood movement that produces cracks, checks, and warpage. To prevent such problems you slow down the drying process, but not so much that the wood becomes susceptible to moisture-related fungi growth that will stain, mold, and lead to decay.

The key: properly locating and carefully building the stack. On the following pages you'll learn the right way to lay up your lumber. But even before you start, there are some things you can do to ensure good results.

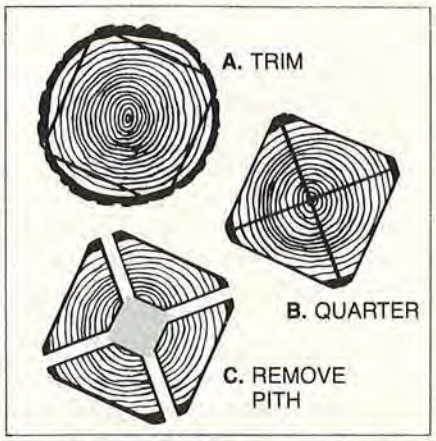
- ***Select only straight-grained boards with minimal defects.*** Boards with knots and sap pockets tend to check and warp more than clear, defect-free lumber. Figured wood, with uneven grain patterns, will check more than unfigured wood.
- ***Stock 1" to 2" thick air-dries best.*** Thinner boards warp when stacked; thicker ones dry too slowly and unevenly.
- ***Start with check-free wood.*** End grain dries 10 times faster than other surfaces, so expect some checking on board ends. You can minimize loss to checking by cutting off any checked ends before drying, then coating the newly exposed wood with a sealer. Use aluminum paint, roofing cement, or a commercial sealant such as Mobilicer-M or Sealtite 60, available from woodworking supply dealers. Or, you may do what sawmills do — leave about 3" extra length on each end of the board for trimming later.
- ***Don't try to dry boards wider than 12".*** Wide boards cup more than narrow boards because wood shrinks more in width than length.
- ***Allow for shrinkage and surfacing.*** If you don't plan to seal the ends, rough-saw the boards at least ⅛" thicker and wider, and 6" or so longer.

HANDLING THICK STOCK

Thick, short carving blocks, bowl blanks for wood turning, slabs, and chunks from short sections of log pose special problems if air-drying because they *are* thick.

For best results with these, split them out from the section of log and cut out the pith (central core of the log), as shown above *right*. Then, either seal *all* sides to slow down the moisture loss, or wrap the piece tightly in a double-layer of newspaper and tape all seams (the newspaper *slowly* wicks away moisture). Place the sealed or wrapped wood in a warm, dry area where air can circulate around it (on stickers or across rafters), and weigh it periodically. When it stops losing weight, the wood has dried.

The time it takes varies with the wood, the thickness, and the method, of course, but a 2'-long, 6"-thick chunk of basswood wrapped in newspaper may dry in a month. Unwrapped, sealed wood may take three months or more.



To make smaller but unsawed pieces (called *flitches*) from a log section, first trim away the bark from the sides, and, if you want, square them up (*A*). Next, quarter the log with two cuts (*B*). Then, split out with the pith (shaded area in *C*).

HOW TO TELL DRY WOOD

Relying entirely on the old adage "one year of drying time per inch of thickness" to gauge dryness may work for some very thick wood, and for some people in some places. But you'll need more accuracy for quality, air-dried stock. In many cases, that "one year" might actually be too long a time.

According to guidelines established by the U.S. Forest Service's Forest Products Laboratory, in Madison, Wis., you can air-dry many hardwoods outdoors to 15-20 percent moisture content in 45-60 days. That's in sunny, temperate, not too humid, weather — late spring to early summer and late summer to mid-fall if you go by the seasons.

To lower the moisture content below 15 percent, you have to move the wood to a heated room approximating the humidity and temperature of where you plan to use it. For this final drying, the wood must be restacked with stickers just as it was outside.

To know what's happening, experts recommend you check your wood's moisture content

Continued

all through the drying process with a moisture meter. Or, you can use the "oven-dry" method explained below.

MEASURING MOISTURE CONTENT WITH THE OVEN-DRY METHOD

Select a sample board, representative of the thickness and type of wood you're drying, from close to the middle of your lumber stack. From it, crosscut a 1"-wide piece about 2" from one end. Avoid knots or other defects. Weigh the test piece and record its weight. Place the piece in an oven set at 215°F. and check it periodically until it no longer loses weight (usually about 24 hours).

Subtract the sample's weight after oven-drying from its initial weight to find the weight of the lost moisture. Then, divide the moisture weight by the oven-dry weight to find the percentage of moisture content your wood has at that stage.

Here's an example: A piece of wood weighs 10 ozs. before drying and 8 ozs. after. The 2-oz. difference represents the weight of the lost moisture. Dividing 2 by 8 gives you .25, or 25 percent moisture content.

You can use the sample board to cut test pieces from throughout the air-drying process. When the wood reaches the moisture content you need, it's ready to work.

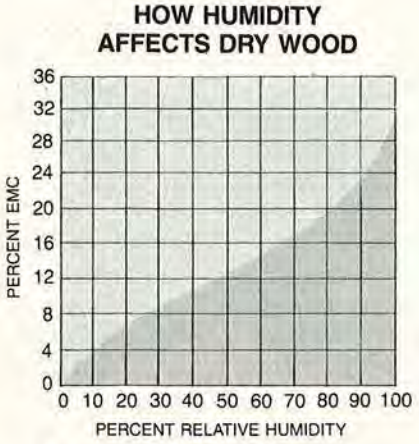
But don't stop yet. Dry wood, unless it's stored with care, can reabsorb a lot of the moisture you've already removed. After air-drying outdoors, don't move the wood into a high-humidity basement, for example. Remember, the temperature and humidity of the room where you store it should be about the same as where you'll use the wood.

Wherever possible, store lumber flat to avoid warping from its own weight. If you can't, keep the boards as near vertical as possible in an upright rack to avoid bowing.

If you have room for flat storage, sticker the boards to allow air circulation under and through them.

HOW HUMIDITY AFFECTS DRY WOOD

It may take as long as two weeks, but dry wood will always balance its moisture content with the relative humidity, as shown in the graph, above *right*. Scientists call this phenomenon *equilibrium moisture content* (EMC).



SEASONING SECRETS: THEY'RE IN THE STACK

Seasoning green wood may be extra work, but worth it. The traditional way calls for stacking the pile carefully, separating each board from the one above and below it with 1x1" wood strips called *stickers*. The boards must also be separated from their neighbors in each layer by a 1" air space.

Many consider a 4x8' pile ideal size because a sheet of plywood can be used for protection on top. Stability of the stack governs how high you build it.

Where you site the stack, how you lay down the boards, and the way you protect them, become just as critical as drying time.

Choosing a site

Furniture and cabinet stock should dry slowly to minimize defects. That's why you need to select a pile site *before* you bring the wood home — so you can sticker and stack the wood immediately.

Avoid damp, boggy areas, overhanging trees that drop leaves and twigs, and the sunniest spot in the yard. Face one end of the pile into the prevailing wind.

If you can build the pile inside an open barn or shed, the wind and weather won't be problems. But in an enclosed space, such as a garage or attic, you may need to install a fan to circulate air.

Build a solid foundation

Our lumber pile, illustrated *right*, has a typical foundation for a 4x8' stack built up to 6' high.

To keep ground moisture from infiltrating the lower layers, first put down some polyethylene sheeting or asphalt roofing felt. On top of the moisture barrier, set concrete blocks to support the two long 4x6" beams called *mudsills*. Together, the mudsills and concrete blocks keep the bolsters and bottom boards of the pile at least 1' off the ground, away from any possible water or mud damage.

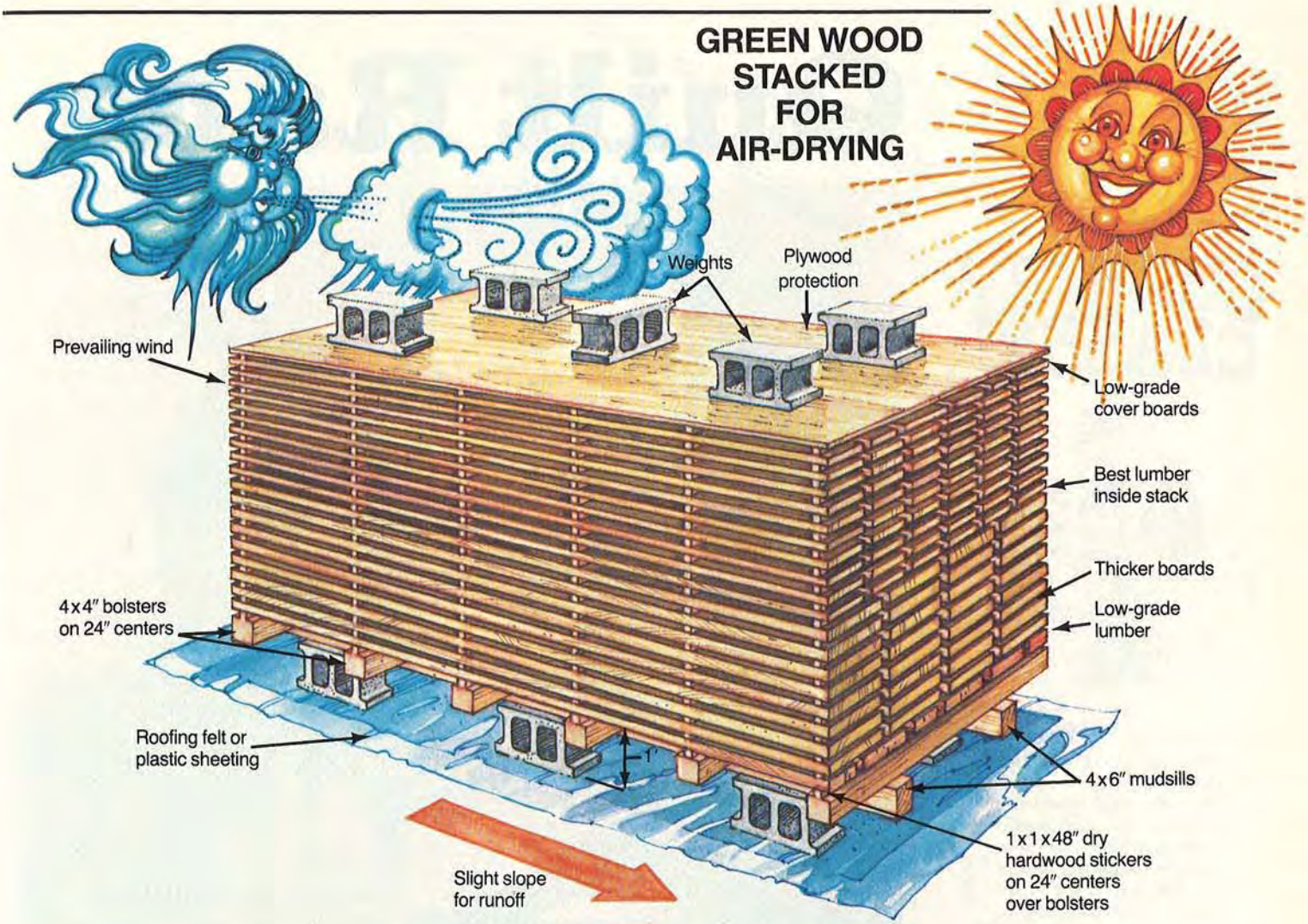
To avoid any bowing and warping an uneven pile might cause, the 4x4" bolsters, or crosspieces, must be level with each other and an equal distance apart. Use a long, straight board or a mason's line to check alignment, and shim to level if necessary. (Note: Your pile can have a slight downhill slope.)

Sticker and stack with care

Have enough stickers on hand to support all your lumber. For each layer in a 4x8' pile, you'll need at least five stickers — one over every bolster, if you set them on 24" centers, and one on each end. If your boards sag a bit, reshuffle the pile and narrow up the bolsters to 16" centers. Careful, though, too many stickers impede airflow.

Always use clean, dry hardwood for your stickers. It's best to make them from the same species of wood you're drying. Otherwise, use birch, maple, poplar, white oak, or willow. Woods such as walnut and red oak tend to stain dissimilar woods.

To start the stacking, center your first layer of stickers directly on the bolsters, as shown. Next, lay down a layer of low-grade lumber to help shield the good wood from ground moisture. Now you can stack the rest of your boards, keep-



HOW LONG GREEN WOOD TAKES TO DRY

Drying days listed for the more popular hardwoods are minimum spring and summer days to arrive at a wood moisture content of 20 percent in 2"-thick stock.

HARDWOOD	DAYS TO DRY
Birch, yellow	75
Butternut	60
Cherry	72
Hickory	62
Maple, hard	55
Oak, red	78
Oak, white	85
Walnut, black	75

ing the stickers aligned and allowing about 1" of space between each board in a layer. Make certain all boards in the same layer are the same thickness.

Since thick boards tend to check or warp if dried too quickly, place them in the lower third of the pile. There, they'll dry more slowly.

Protect your drying wood

Top off the pile with a layer of lower-grade lumber, then cover it with plywood — stickered, of course. This protects your good boards from direct sunlight, rain, and snow. A stack in an area exposed to sunshine most of the day may need to have the sides shaded with light canvas or other woven material that "breathes."

Use bricks, cement blocks, or stones to weight the pile and keep the cover in place.

Maintaining the stack

Providing you've taken all the precautions in stock preparation, siting and building the foundation, and laying up the boards, there'll be little to do except keep debris clear while you're waiting. You'll also need to keep your eye out for "wild" boards that in warping, may throw the pile out of kilter. If that happens, remove the outlaw board and restack.

Check the drying rate visually. Look for excessive checking or warp, which means wood is drying too quickly and needs more protection from wind and sun. Spotting the dark stains of mold and fungus indicates too slow drying, and calls for opening up the pile to more sun and wind.

Written by Jim Barrett and Peter J. Stephano
Photograph: Peter J. Stephano
Illustrations: Jim Stevenson

CRAFT A

COUNTRY CLASSIC

Cold drafts snaked through homes like clouds through a mountain pass. And when the logs in the old wood stove died down to mere embers in the wee hours of the morning, one didn't want to have to venture too far across a cold floor for an extra quilt or feather tick. There was no handier place to store that needed warmth than on a quilt rack next to the bed.

Print this article

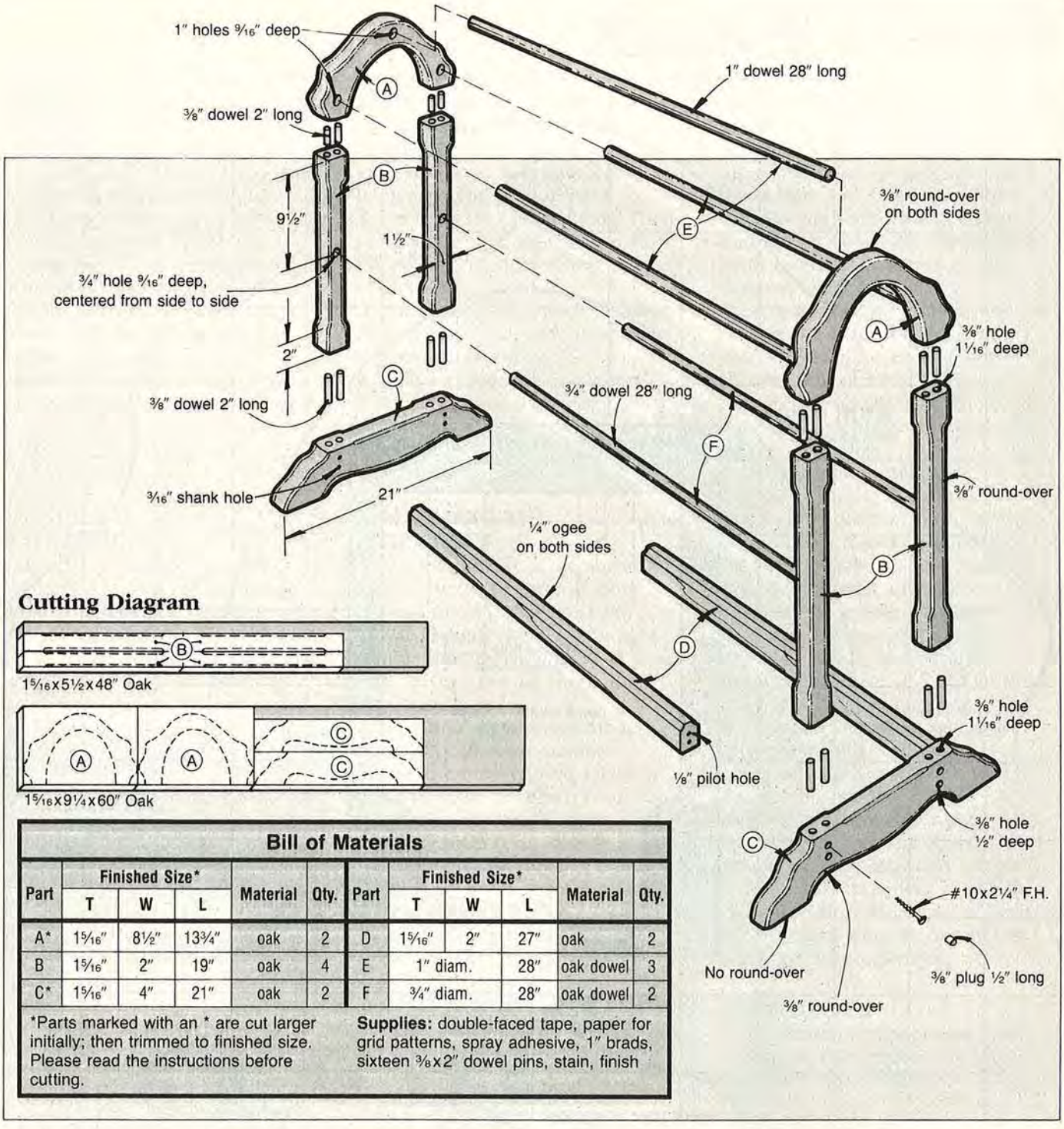
Quilt Rack

Share the beauty of treasured handiwork or a hand-me-down heirloom on this distinctive quilt rack. Practical and attractive, it fits nicely into most home decors.

FORMING THE END SECTIONS

1 To form the arches (A), cut two pieces of 1 5/16" oak — often called 6/4 (six-quarter) stock — 9" wide by 14½" long. (We edge-joined narrower stock to make the 9" width.)

2 Using double-faced tape, stick the two arch blanks together face to face. Run the bottom edge of the arches over a jointer until the two are flush.



Cutting Diagram

Bill of Materials

Part	Finished Size* T	W	L	Material	Qty.	Part	Finished Size* T	W	L	Material	Qty.
A*	1 5/16"	8½"	13¾"	oak	2	D	1 5/16"	2"	27"	oak	2
B	1 5/16"	2"	19"	oak	4	E	1" diam.		28"	oak dowel	3
C*	1 5/16"	4"	21"	oak	2	F	¾" diam.		28"	oak dowel	2

*Parts marked with an * are cut larger initially; then trimmed to finished size. Please read the instructions before cutting.

Supplies: double-faced tape, paper for grid patterns, spray adhesive, 1" brads, sixteen 3/8x2" dowel pins, stain, finish

3 Draw a 1" grid measuring 9x14" on a piece of paper. Lay out the shape of the arch on the grid, using the Arch Grid on page 70 as a guide. To do this, mark the points where the arch outline crosses each grid line. Then, draw a line to connect the points.

Mark the center points for the 1" dowels (E) onto the grid. Apply spray adhesive to the back of the grid, and stick it to the arches. Position the grid so the bottom edge aligns with the bottom edge of the arch blanks.

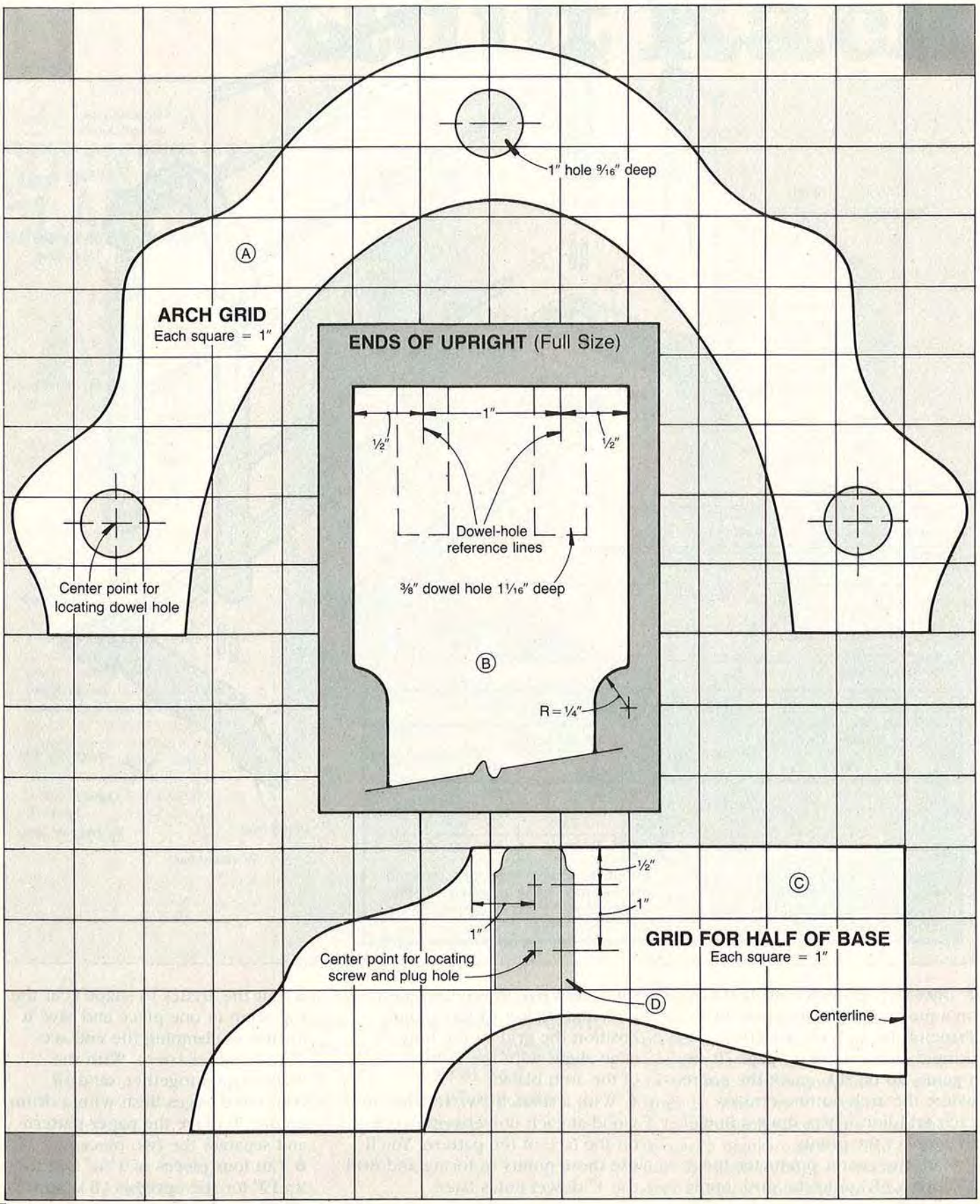
4 With a scratch awl, indent the wood at each dowel center point on the face of the pattern. You'll use these points to locate and drill the 1" dowel holes later.

5 Cut the arches to shape (cut the top scrap in one piece and save it for use in clamping the end sections together later). With the arches taped together, sand all contoured edges flush with a drum sander. Remove the paper pattern and separate the two pieces.

6 Cut four pieces of 1 5/16" oak to 2x19" for the uprights (B). Now,

Continued

Quilt Rack


1" hole 9/16" deep
A
ARCH GRID
Each square = 1"
Center point for locating dowel hole
ENDS OF UPRIGHT (Full Size)
1"
1/2"
1/2"
Dowel-hole reference lines
3/8" dowel hole 1 1/16" deep
B
R = 1/4"
1/2"
1"
1"
C
GRID FOR HALF OF BASE
Each square = 1"
Center point for locating screw and plug hole
D
Centerline

using the full-sized drawing at *left*, lay out the ¼" radii and dowel-hole reference lines on each end of the uprights. Cut and drum-sand the uprights to shape. Using the dimensions on the Exploded-View Drawing, mark the dowel-hole center points for each ¾" dowel on the inside face of two of the uprights. Keep these two marked uprights together to assemble in the first end section later.

7 Using the same techniques as described in steps 2 through 5 and the grid drawing at *left* as a guide, lay out, cut, and drum-sand the two bases (C) to shape.

ASSEMBLING THE END SECTIONS

1 Dry-clamp each end section together. As shown in the photo *below*, transfer the dowel-hole reference lines from the ends of each upright onto their mating arch and base pieces. (We used the scrap cutout from the top of each arch and the bottom of each base as straight edges to clamp against.) Labeling the mating pieces at each joint also helps speed up assembling each end section later.

2 Unclamp the end sections. Then, using a doweling jig, drill a pair of ⅜" holes 1 1/16" deep where marked at each joint.

3 Cut sixteen ⅜" dowels 2" long. Now, glue, dowel, and clamp each end section together.

4 Sand each end section smooth. Rout a ⅜" round-over along all edges *except* the feet of the bases where shown on the Exploded-View Drawing.

ASSEMBLING THE QUILT RACK

1 Cut the two cross members (D) to size. Next, cut three 1" dowels (E) and two ¾" dowels (F) to finished length (28"). If you have trouble finding oak dowels in your area, see our Buying Guide for a mail-order source.

2 Rout a ¼" ogee along the top edges of both cross members.

3 Snip the head end off a 1" brad, and chuck the brad into your drill. Using the brad as a bit, drill ½"-deep holes (one in each of the two uprights and three in one of the arches) on the center points marked earlier.

Snip the ends off five similar-sized brads so the brads are ⅝" long. Insert a brad in each hole you just drilled. Place the second end section inside face down on top of the other end section. Align the bottom and side edges. Press the two end sections together to transfer the dowel-hole center point locations as shown in the drawing *lower left*.

4 Separate the end sections and remove the brads. Finally, drill a 1" hole 9/16" deep for each 1" dowel (E) and ¾" holes 9/16" deep for each ¾" dowel (F) using the brad holes and indentations in each end section as guides.

5 Dry-clamp the quilt rack together with the dowels and cross members in position (note on the grid drawing that the top edge of the cross members aligns flush with the top edge of each base). Now, using the hole sizes shown on the Exploded-View Drawing, drill plug, shank, and pilot holes through each base (C) and into the ends of each cross member.

6 Glue and clamp the rack with all cross members and dowels in place between the end sections. Remove any excess glue after a tough skin forms. Fasten the cross members to the bases with #10x2¼" flathead wood screws.

7 Plane a thicker piece of oak to 9/16" thick. Cut ⅜" plugs 9/16" long from the oak. Plug the screw holes and sand the plugs flush.

FINISHING UP

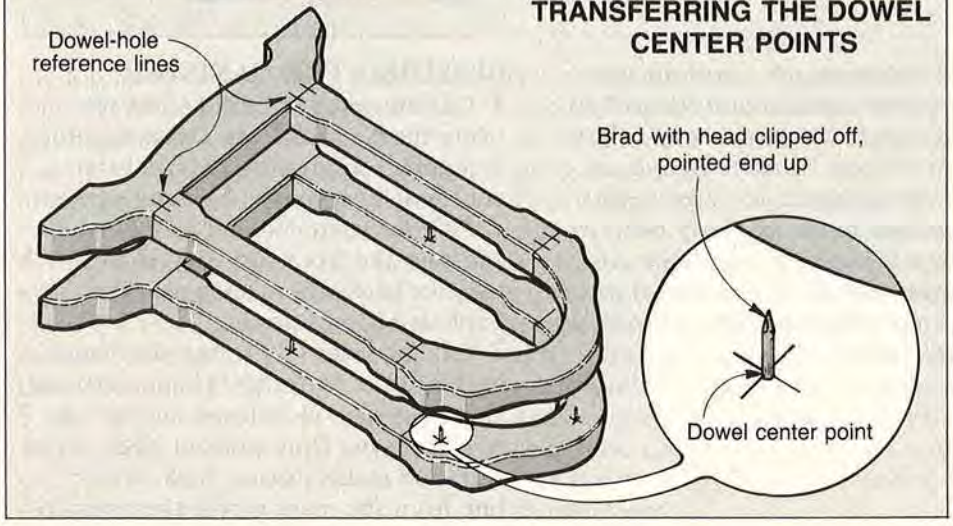
1 Finish-sand and apply the stain and finish. (We applied a walnut stain and polyurethane.)

BUYING GUIDE

• **Oak dowels.** 1"-diameter dowel 36" long, $2.30 each (3 needed). ¾"-diameter dowel 36" long, $1.90 each (2 needed). Plus $2.50 handling. Woodworks, 4013-A Clay Ave., Fort Worth, TX 76117, or call 817/281-4447.

Project Design: Wes Gard
Photographs: Hopkins Associates; Jim Kascoutas; Bob Calmer
Illustrations: Kim Downing; Bill Zaun

TRANSFERRING THE DOWEL CENTER POINTS



CRAFT A

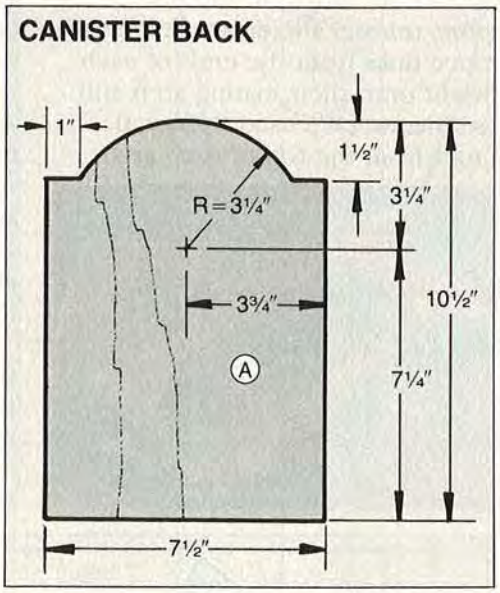
COUNTRY CLASSIC

Kitchen Canisters

The mill was a common gathering point in the fall. Farmers from far and wide would come to have part of their wheat harvest ground into flour. Hauled home in 100-pound sacks, a small amount of the flour was placed in a kitchen canister for convenience.

Print this article

In Grandma's house the kitchen canisters sat at arm's length from the stove, brimming full of the ingredients she used in her daily cooking. These oak canisters will convey the same functionality and charm in your kitchen. And as a bonus, we've thrown in an easy-to-make brass scoop. **See page 75.**



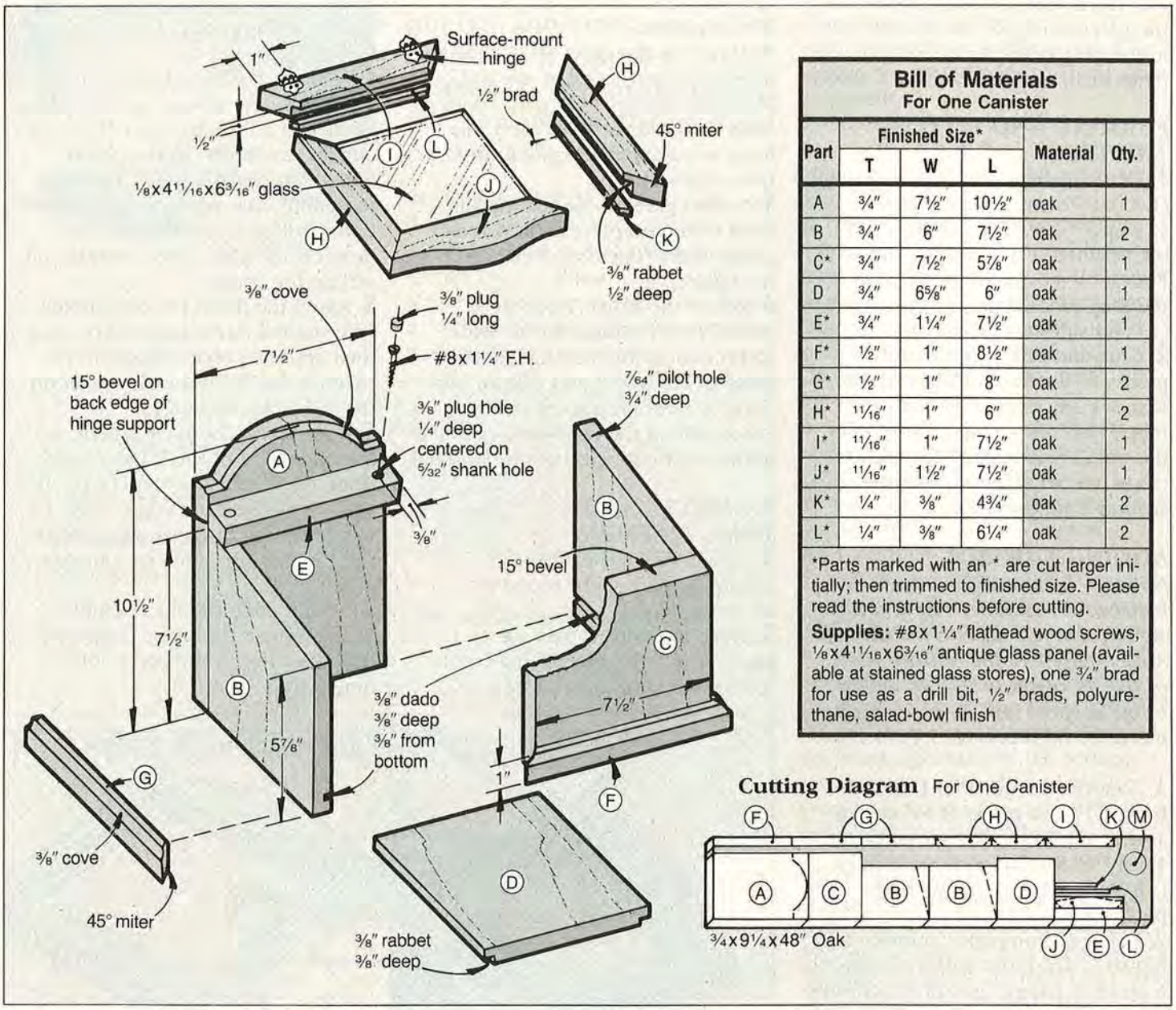
Note: *The instructions explain how to make one canister, and the Bill of Materials gives the number of pieces required for one canister. Decide on how many canisters you want, and then cut and make as many parts as necessary. If making more than one, we suggest you cut all identical pieces at the same time to ensure uniformity and save time.*

BUILDING THE CANISTER

1 Cut the canister back (A) to size. Using the Canister-Back Drawing *above* as a guide, lay out the radiused top edge, cut it to shape, and sand smooth.

2 Fit your router with a ⅜" cove bit, and rout the front top edge of the canister back where shown in the Exploded-View Drawing.

3 Cut the sides (B) to the size listed in the Bill of Materials. Then, mark and angle-cut each as follows: measure up 5⅞" from the front bottom edge of one side, and make a mark. Now, draw a line from the mark across the grain to



Bill of Materials
For One Canister

Part	Finished Size*			Material	Qty.
	T	W	L		
A	¾"	7½"	10½"	oak	1
B	¾"	6"	7½"	oak	2
C*	¾"	7½"	5⅞"	oak	1
D	¾"	6⅝"	6"	oak	1
E*	¾"	1¼"	7½"	oak	1
F*	½"	1"	8½"	oak	1
G*	½"	1"	8"	oak	2
H*	1 1⁄16"	1"	6"	oak	2
I*	1 1⁄16"	1"	7½"	oak	1
J*	1 1⁄16"	1½"	7½"	oak	1
K*	¼"	⅜"	4¾"	oak	2
L*	¼"	⅜"	6¼"	oak	2

*Parts marked with an * are cut larger initially; then trimmed to finished size. Please read the instructions before cutting.

Supplies: #8x1¼" flathead wood screws, ⅛x4 1⁄16x6 3⁄16" antique glass panel (available at stained glass stores), one ¾" brad for use as a drill bit, ½" brads, polyurethane, salad-bowl finish

Cutting Diagram For One Canister

the top back corner. Align your radial arm saw blade with the marked line, and make your cut. You can also make the cut using a table saw and miter gauge. Repeat for the other canister side.

4 Cut the canister front (C) to size plus ¼" in length. Tilt your saw blade 15° from vertical, and bevel-cut the top edge of the front to finished length (5⅞").

5 Cut or rout a ⅜" dado ⅜" deep ⅜" from the bottom edge of each side piece where shown on the Exploded-View Drawing.

6 Cut the bottom (D) to the size listed in the Bill of Materials. Then, cut or rout a ⅜" rabbet ⅜" deep along each edge.

7 Dry-clamp the parts together to check the fit. The bottom should fit a bit loose to allow for expansion, especially across the grain. Check the beveled top edge of the front against the angled top edge of the sides; sand or trim flush if necessary. Remove the clamps. Now, glue and clamp the canister together. Do not glue the bottom (D) in the rabbet, it "floats" freely.

8 Cut the hinge support (E) to size plus ¼" in width. Then, bevel-rip one edge at 15° to a finished width of 1¼". (For safety, we cut one long length for all the hinge supports; then bevel-ripped one edge of the length, and finally cut the pieces to finished length.)

9 Position and dry-clamp the hinge support to the canister. Now, drill the plug, shank, and pilot holes through the hinge support and into the sides (B) as dimensioned on the Exploded-View Drawing. Glue and screw the hinge support in place.

Continued

Kitchen Canisters

10 Plane a piece of scrap oak to 5/16" thick. Cut 3/8" oak plugs from the piece, and glue and insert them in the plug holes. Later, sand the plugs flush and the canister smooth.

FORMING AND FITTING THE TRIM

1 Cut and shape the base molding (F, G). (We cut an oak piece 3/4x1x27" for each canister, and then planed it down to 1/2" thick.) Rout a 3/8" cove along one edge of the long piece. Miter-cut the front (F) and sides (G) to length.
2 Glue and clamp the molding pieces to the base of the canister. Remove any excess glue after a tough skin has formed. Later, sand the molding smooth. (To sand the coves, we wrapped sandpaper around a 3/8" dowel.)

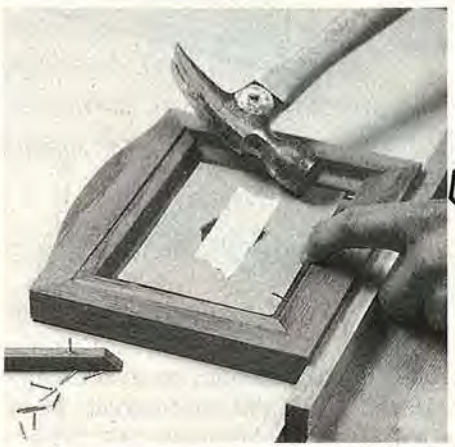
ADDING THE LID

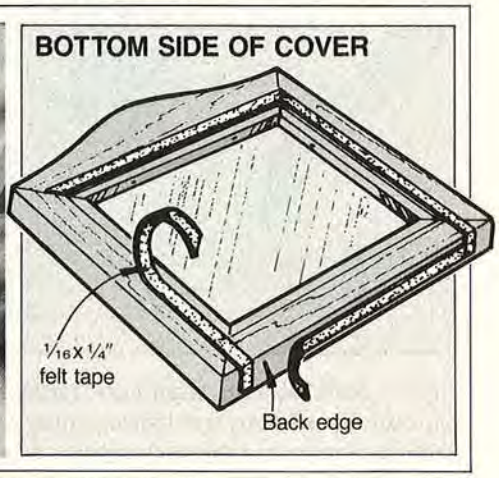
Note: *To form a tighter seal between the canister top and lid, we applied felt tape to the lid. Applying felt to the bottom edge of the lid raises it 1/16" above the hinge support (E). To compensate, plane the lid pieces (H, I, J) to 11/16".*

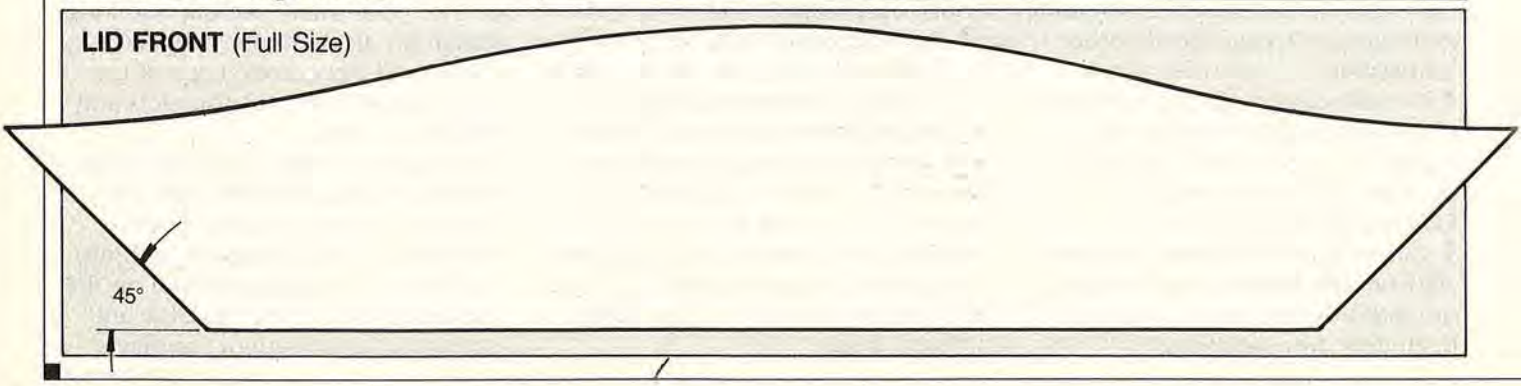
1 To form the lid sides (H) and back (I) cut a piece of 3/4" oak to 1x22" long. Cut another piece to 1 1/2x7 1/2" for the contoured front (J). Now, plane, joint, or resaw both pieces to 11/16".
2 Using carbon paper, transfer the full-sized Lid-Front Pattern *below* to a piece of paper. Use spray adhesive to stick the pattern to the lid front, and cut the contoured edge to shape (do not cut the ends yet). Sand the front edge smooth.
3 Cut or rout a 3/8" rabbet 1/2" deep along the inside edges of the lid pieces.
4 Miter-cut the parts (H, I, J) to the finished length listed in the Bill of Materials. Remove the paper pattern from the lid front. (We used this front as a template to mark the other fronts.)
5 Spread glue on the mating surfaces of the lid pieces, and band-clamp them together, checking for square.
6 Resaw the stops (K, L) to 1/4" thick. Now, rip these to 3/8" wide and miter-cut the parts to finished length. (For safety and ease in handling, we cut long strips to thickness and width on the band saw, and then miter-cut the long pieces to length.)

FINISHING AND FINAL ASSEMBLY

1 Finish-sand the canister and lid, sanding a very slight round-over on all sharp edges.
2 Have glass cut to size for each canister lid (see the Buying Guide for the size and our source).
3 Snip the head off a 3/4" brad, chuck it in your hand drill, and use it as a bit to drill pilot holes in the stops (K, L).
4 Position the glass in the rabbet. Nail the stops in position with 1/2" brads and a light hammer (9 or 10 ounces) as shown in the photo *below left.* Set the brads. (Note in the photo, that we taped a piece of thin cardboard to the glass. This protects the glass when nailing and setting the brads.)
5 Apply the finish of your choice. (We stained our canisters first, and then applied polyurethane on the exterior and a salad-bowl finish on the inside.)
6 Apply self-adhesive felt tape to the underside of the lid sides and front. Also, adhere a strip of the felt tape along the back edge of the lid where shown in the drawing *below.* See the Buying Guide for our source of felt tape.
7 Finally, slide the lid assembly firmly against the hinge support (E), drill pilot holes, and screw the hinges in position.





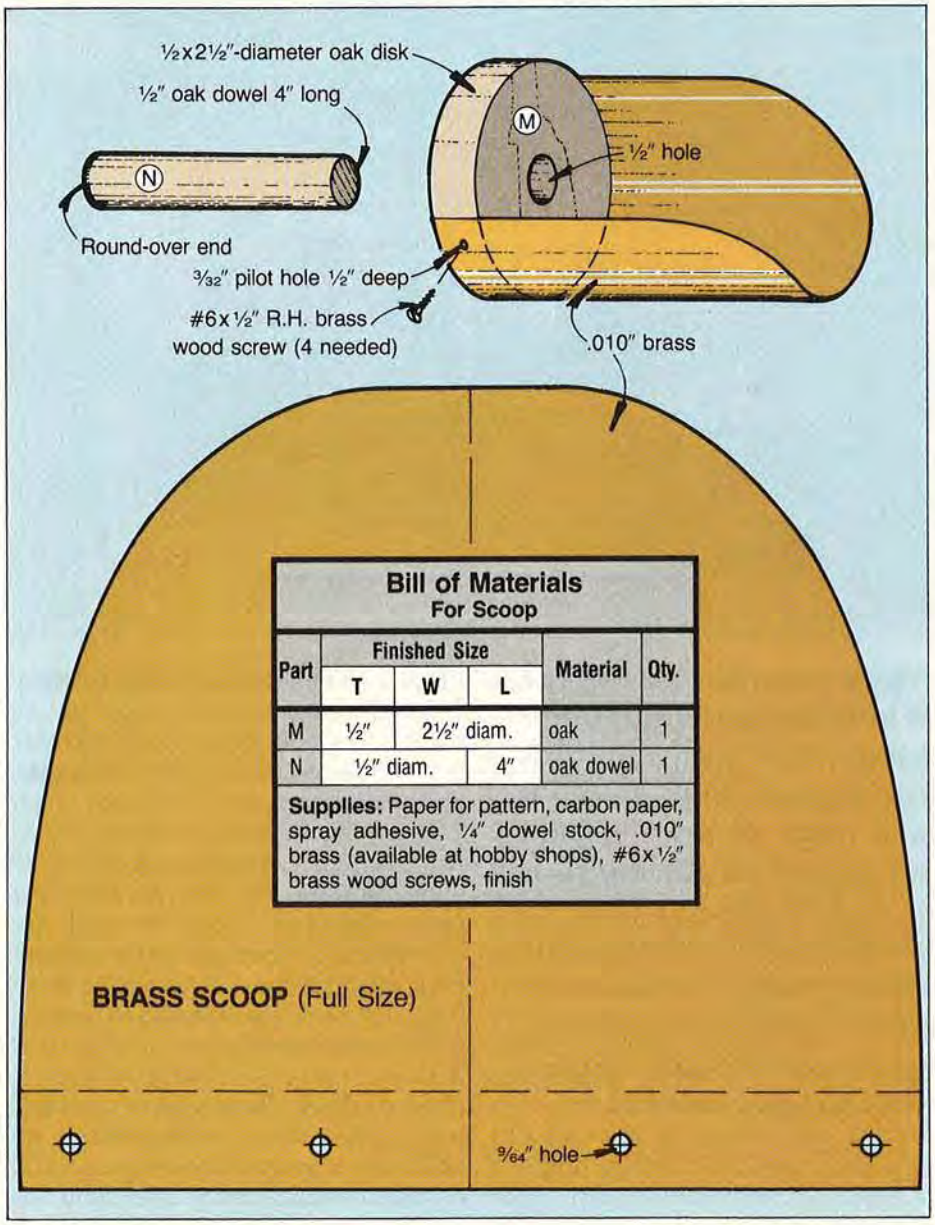


Brass Scoop

Top off your canister set with our oak and brass scoop. Not only does it complement the canisters, it's super-handy for removing those vital cooking ingredients.

MAKING THE SCOOP

1 Plane or resaw a scrap of oak to ½" thick. Mark a 2½"-diameter circle on the ½" scrap. Cut the disk to shape for the scoop back (M). Drill a ½" hole through the center point and sand the disk smooth.



Bill of Materials
For Scoop

Part	Finished Size T	W	L	Material	Qty.
M	½"	2½" diam.		oak	1
N	½" diam.		4"	oak dowel	1

Supplies: Paper for pattern, carbon paper, spray adhesive, ¼" dowel stock, .010" brass (available at hobby shops), #6x½" brass wood screws, finish

BRASS SCOOP (Full Size)

2 Cut a piece of ½" dowel stock to 4" long for the scoop handle (N). Sand a round-over on one end. (We sanded the round-over to shape on a belt sander.)

3 Glue the dowel handle in the hole in the scoop back. Later, scrape off any excess glue, finish-sand, and apply the finish.

4 Using carbon paper, transfer the full-sized scoop pattern and hole locations to paper, and cut the paper to shape with a scissors. Apply spray adhesive to the paper pattern, and stick it to a piece of 4x5" .010"-thick brass (most hobby stores sell thin brass sheets).

5 Cut the brass to shape with a scissors, and sand or file the cut edge smooth.

6 With the pattern still on the brass, drill the four 9/64" holes. Remove the paper pattern.

7 Roll the brass around a 16-ounce pop bottle to preform it. Now, position the rounded brass on the scoop back, and drill a 3/32" pilot hole ½" deep into the scoop back. Fasten the brass to the scoop back with a #6x½" brass wood screw. Keeping the brass tight against the scoop back, start at one side and work your way around the disk drilling holes and fastening the brass.

BUYING GUIDE

- **Glass.** Hand-blown full antique glass, 1/8x4 11/16x6 3/16", $5.50 each, or a set of four for $13 (both prices include shipping and handling). The Stained Glass Store, 3617 Ingersoll Ave., Des Moines, IA 50312, or call 515/279-4855.
- **Hinges.** Catalog no. D3018, 90 cents per pair. The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374, or call 612/428-2199 to order.
- **Felt tape.** ¼" width, catalog no. D1715, 35 cents per foot (28" needed per canister). The Woodworkers' Store, address above.

Project Design: Dave Ashe
Photographs: Hopkins Associates; Jim Kascoutas
Illustrations: Kim Downing; Bill Zaun

Spice Cabinet

CRAFT A
COUNTRY
CLASSIC

It all came down to convenience. Spices were used in almost every dish and needed to be close at hand. Time spent rummaging through the cupboard for a pinch of basil or teaspoon of cinnamon was time wasted. The ingredients needed to be easily accessible and orderly displayed for the quick finding of just the right one. The spice cabinet became the perfect solution.

Print this article

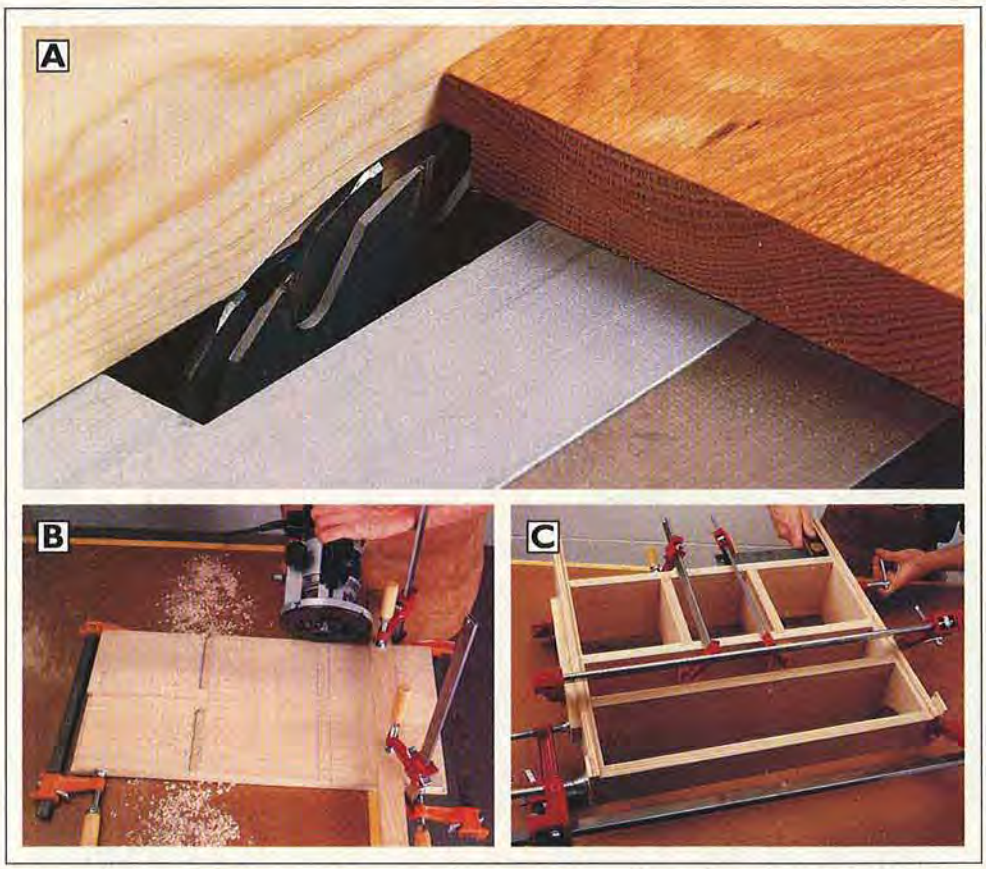
Most spice racks do an adequate job of keeping herbs and other flavorings at the ready. But this project doesn't stop there. It offers a bank of drawers and several shelves for storing your spices and displaying your favorite kitchenware. The antique glass doors and porcelain drawer knobs also add a fitting design accent to the quaint lines of the spice cabinet.

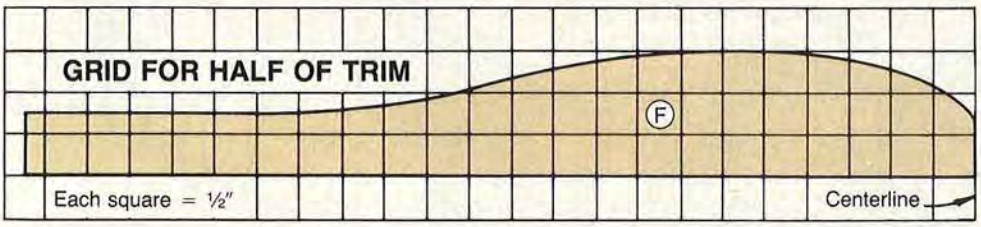
FIRST, CONSTRUCT THE CASE

1 Cut the case sides (A), inner shelves (B), and lower shelf (C) to the sizes listed in the Bill of Materials plus 1/16" in width.

2 Using the dimensions on the Exploded-View Drawing, locate the four dadoes on the side pieces and cut 3/8" dadoes 3/8" deep. Now, cut a 3/8" rabbet 3/8" deep along the ends of each shelf. (We test-cut a rabbet in a piece of scrap and checked its fit in the dadoed sides first.)

3 Cut or rout a 1/4" rabbet 3/8" deep along the back inside edge of each side piece. (We cut our rabbets with a table saw. If you go this route, mount an auxiliary-wood fence to





your rip fence and a dado blade set to cut ⅜" wide to the saw arbor.) Measure and position the outside edge of the dado blade ¼" from the outside edge of the wooden fence. Start the saw and raise the blade ⅜" above the surface of the saw table and into the wood fence. Cut the rabbet as shown in photo A.

4 Joint, plane, or saw 1/16" off the *front* edge of sides and shelves to remove any chipping that may have occurred when you cut the dadoes and rabbets.

5 Using double-faced tape, stick the sides together face to face, making sure to align the dadoes and rabbet. Set your compass at 3" and lay out the radius on the lower front corner of the sides where shown in the Exploded-View Drawing. Cut the radius to shape, sand smooth, separate the pieces, and remove the tape.

6 Lay out and cut ¾"-wide stopped dadoes ¼" deep into the *bottom* side of the top shelf and the *top* side of the center shelf where shown in the Exploded-View Drawing. Cut or rout the stopped dadoes to size. (After marking the location of the dadoes, we clamped the two shelves together with the front edge of one butting the front edge of the other. Then, we clamped a straight board to act as a fence and used a ¾" straight bit to rout the stopped dadoes as shown in photo B.) Finally, chisel the rounded ends of the dadoes square.

7 Cut the dividers (D) to size. Then, dry-clamp the case together to check the fit of all joints. Remove the clamps and sand all the pieces smooth. Next, glue and clamp the parts together checking for square as shown in photo C. Also, remember to keep the shelves flush with the *inside* edge of the rabbet on the back edge of the sides. Remove any excess glue.

NOW, ADD THE TOP, TRIM, CLEAT, AND BACK

1 Cut the top of the case (E) to size. Then, rip and crosscut a piece of ¾" oak to 1½x22½" for the top trim (F). On a piece of paper draw a ½" grid. Using the Trim Grid at *left* as a guide, mark the points where the trim outline crosses each grid line. Connect the points to complete the pattern. Apply spray adhesive to the back of the pattern and stick it on the trim piece. Cut the trim piece to shape and remove the pattern.

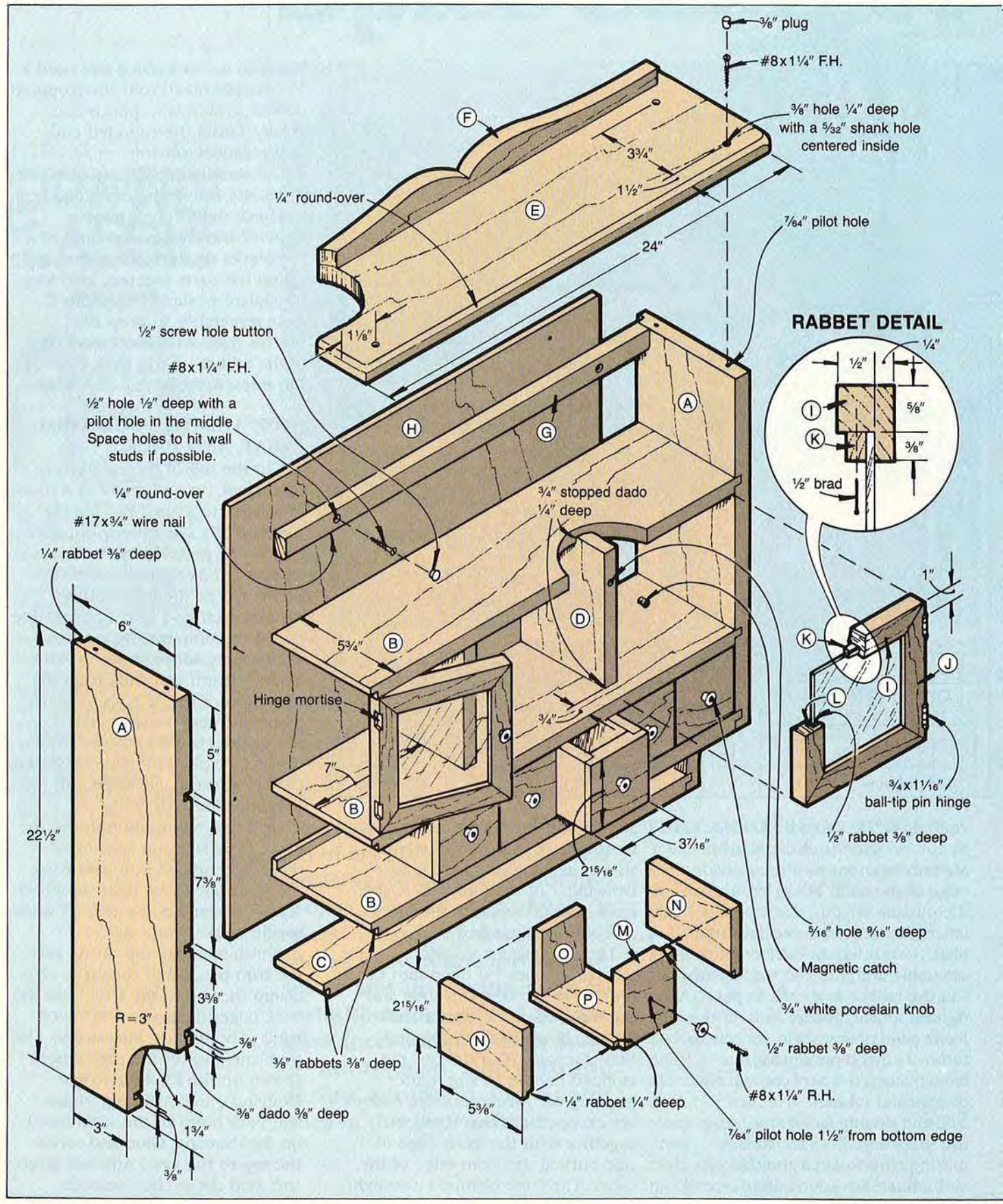
2 Cut the cleat (G) to size. Then, rout a ¼" round-over along the top (E) and cleat where shown in the Exploded-View Drawing.

Drill two mounting holes in the cleat. (The size and spacing of these depends on how you hang the spice shelf. Use flathead wood screws if you can locate wall studs; toggle bolts if you can't.)

3 Finish-sand the top of the case, the trim piece, and the cleat. Dry-clamp the top to the case with the back edges flush and a ¾" overhang at both ends. Measure in 1⅛" from the ends of the top (where shown on the Exploded-View Drawing), and drill plug, shank, and pilot holes to the sizes listed on the drawing. Glue and screw the top to the case. Add oak plugs and sand the surface smooth.

Continued

Spice Cabinet



Bill of Materials

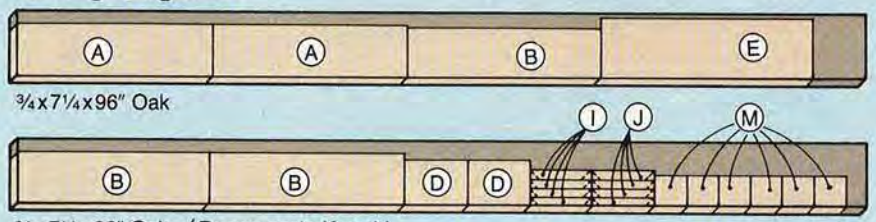
Part	Finished Size* T	W	L	Material	Qty.
THE CASE					
A*	¾"	6"	22½"	oak	2
B*	¾"	5¾"	21¾"	oak	3
C*	¾"	2¾"	21¾"	oak	1
D	¾"	5"	7½"	oak	2
E	¾"	6¾"	24"	oak	1
F	¾"	1½"	22½"	oak	1
G	¾"	1"	21"	oak	1
H	¼"	21¾"	22½"	oak plywood	1
THE TWO DOORS					
I*	¾"	1"	7⅜"	oak	4
J*	¾"	1"	6⅞"	oak	4
K*	¼"	⅜"	6⅛"	oak	4
L*	¼"	⅜"	5⅝"	oak	4

Part	Finished Size* T	W	L	Material	Qty.
THE SIX DRAWERS					
M*	¾"	2 15/16"	3 7/16"	oak	6
N*	½"	2 15/16"	5⅜"	oak	12
O	½"	2 7/16"	2 1/16"	oak	6
P	¼"	2 15/16"	5¼"	oak plywood	6

*Parts marked with an * are cut larger initially; then trimmed to finished size. Please read the instructions before cutting.

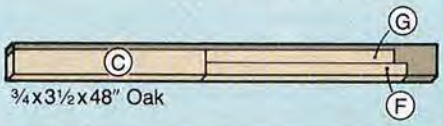
Supplies: double-faced tape, #8x¼" F.H. wood screws, #17x¾" wire nails, ½" brads, ½" screw hole buttons, spray adhesive, stain, polyurethane, salad bowl finish

Cutting Diagram

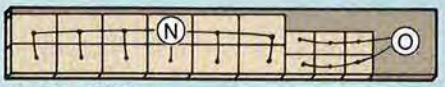


¾x7¼x96" Oak

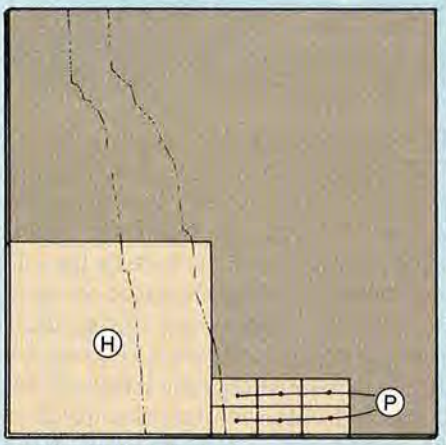
¾x7¼x96" Oak (Resaw parts K and L from the scrap of this piece.)



¾x3½x48" Oak

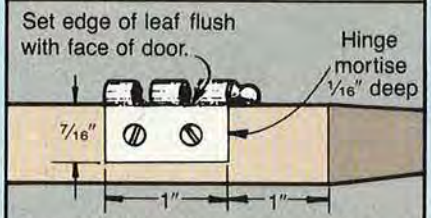


½x7¼x48" Oak

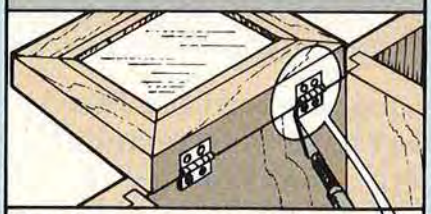


¼x48x48" Oak Plywood

ATTACHING THE HINGES



Step 1 Mark location, chisel mortise, drill holes, and fasten leaf in mortise.



Step 2 Insert hinge pins. With the door centered on opening, scribe vertical hinge location lines.

Step 3 Center hinge on marks, top flush with front edge. Mark screw centers, drill pilot holes, and fasten each leaf.

4 Glue and clamp the cleat (G) to the bottom side of the top (E) where shown on the Exploded-View Drawing.

5 Glue and clamp the trim piece (F) to the top, flush with the back edge of the top and centered from side to side.

6 Cut the back (H) to size from ¼" oak plywood. Check its fit in the rabbeted opening in the back of the case and set it aside for now.

NEXT, BUILD THE DOORS

1 For the door frames, cut four strips of ¾" oak 1x16" long. Now, rout or cut a ½" rabbet ⅜" deep along one edge of each piece where shown on the Rabbet Detail accompanying the Exploded-View Drawing. Then, miter-cut the door tops and bottoms (I) and sides (J) to finished length.

2 Glue and clamp each door frame together with band clamps, checking for square. Later, scrape off the excess glue.

3 To make the stops (K, L) from ¾" oak stock, resaw long strips to ¼" thickness, cut to ⅜" wide, and then miter-cut the stops to length.

4 Snip the head off a 1" brad. Chuck the brad in your drill, and use it as a bit to drill two pilot holes through each stop (K, L).

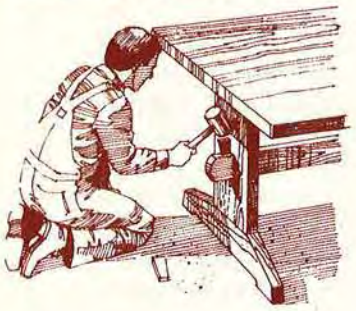
5 Using the three-step drawing at *left* as a guide, attach the hinges to the doors and then to the cabinet sides. Hang the doors.

6 Drill a 5/16" hole 9/16" deep in each divider (D) to accept the magnetic catches. Insert one in each hole. Close the doors almost completely, and mark where the magnetic catch makes contact with the back of each door. Remove the doors, and then drill a pilot hole and drive a mating screw for each magnetic catch.

7 To mount the porcelain knobs, measure up 3⅜" from the bottom of each door and drill a 7/64" pilot hole ½" deep for each knob. (Instead of using the machine screw that comes with the knobs, we substituted a #8x1¼" round-head wood screw in its place.)

Continued on page 85

CRAFT A
COUNTRY CLASSIC



Before the introduction of the fancy hardware and fasteners we enjoy today, the early furniture makers had to rely on devices fashioned from wood.

When building trestle tables, the Shakers developed the wedge key to secure the cross member to the base ends. Tapped into place, the wedge key secured the joint. Tapped back out, it allowed the table base to be quickly disassembled for ease in moving.

Print this article

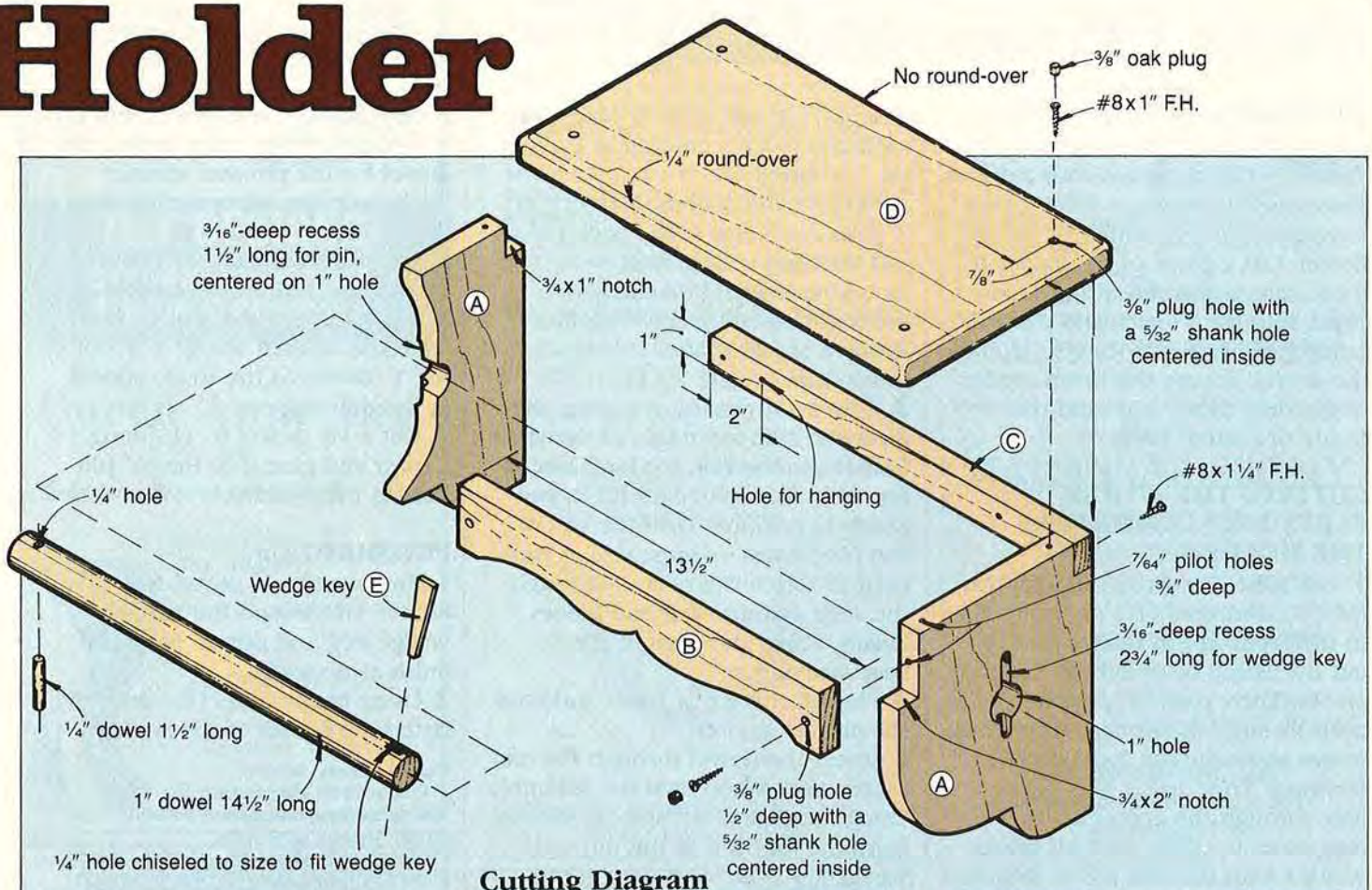
Paper Towel

Finally, a paper-towel holder you don't have to hide under the kitchen sink! In fact, you'll want to mount it in a prominent spot to show off the intriguing wedge-key joint that secures the towel roller in place.

START WITH THE END PIECES

1 Rip and crosscut two pieces of ¾" oak to 7¼" wide by 8½" long. Then, using double-faced tape, stick the two oak pieces together face to face with the edges flush. Using the drawing of the end piece (A) on the next page as a guide, lay out the shape and hole location on one of the end pieces.

Holder

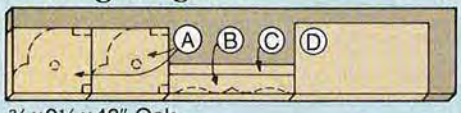


Bill of Materials

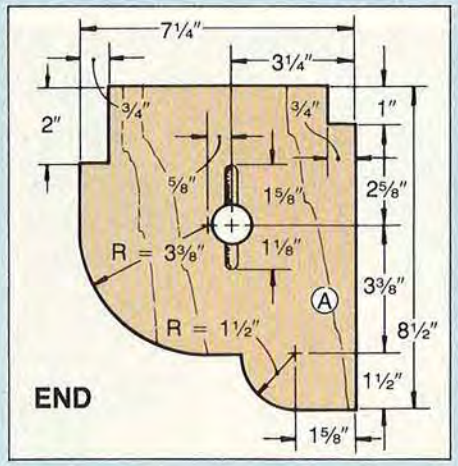
Part	Finished Size T	W	L	Material	Qty.
A	3/4"	7 1/4"	8 1/2"	oak	2
B	3/4"	2"	13 1/2"	oak	1
C	3/4"	1"	13 1/2"	oak	1
D	3/4"	7 3/4"	14 1/2"	oak	1
E	1/4"	1/2"	2"	oak	1

Supplies: 1" oak dowel, 1/4" oak dowel, double-faced tape, paraffin, #8x1" flathead wood screws, #8x1 1/4" flathead wood screws, stain, finish, toggle bolts

Cutting Diagram



3/4x9 1/4x48" Oak



2 Cut the two notches in the taped-together end pieces using a table saw and miter gauge.

3 Drill a 1" hole through the pieces, backing the bottom piece with scrap to prevent chip-out. Using the End Drawing as a guide, lay out the recess for the wedge key on one end piece and the pin on the other. Stick the end pieces to your workbench top with double-faced tape.

4 To form the wedge-key and dowel-pin slots, start by fitting your router with a 3/8"-core box bit set to cut to a depth of 3/16". Attach an edge guide to your router base, and position the inside edge of the guide exactly 3 1/4" from the center of the bit. As shown in the photo *above*, rout a 2 3/4"-long slot for the wedge key on one of the end pieces. Flip the end pieces over, retape to the workbench, and rout a 1 1/2"-long recess centered over the 1" hole for the 1/4" dowel pin.

5 Cut the end pieces to shape with a band saw or jigsaw; then sand the contoured edges smooth. Separate the two pieces and remove the double-faced tape.

6 Cut a 1"-diameter dowel to 14 1/2" long. For a smooth fit of the dowel through the 1" hole in each end

Continued

Paper Towel Holder

piece, sand the inside of each hole larger. (We made the drum sander shown in the photo *below*.) You can make one by cutting a 4″-long kerf in one end of a 7″ length of ⅜″ dowel. Cut a piece of sandpaper to 4x4″, insert one end of the sandpaper into the 4″ kerf, and wrap the sandpaper counterclockwise around the dowel. Secure the drum sander in the drill chuck and sand the inside of each 1″ hole.

CUTTING THE OTHER PARTS AND ASSEMBLING THE HOLDER

1 Cut the front apron rail (B), rear rail (C), and shelf (D) to size (refer to the Front-Apron Drawing to lay out B). Clamp both rails to the end pieces. Then, drill ⅜″ plug holes ½″ deep through the front and rear rails where shown in the Exploded-View Drawing. Now, drill a 5/32″ shank hole through the center of the ⅜″ plug holes until the drill bit makes contact with the end piece. Switch to a 7/64″ bit, and drill ¾″ deep into each end piece, centered in each of the 5/32″ holes.

2 Remove the clamps. Measure in 2″ from each end of the back rail, and drill and countersink two mounting holes. Glue and screw the rails and end pieces together. Remove any glue after it forms a tough skin.

3 Rout a ¼″ round-over along the front and side top edges of the shelf. Center the shelf on the base assembly with the back edges flush, and clamp in position. Drill the screw and plug holes — same size as those used to attach the rails — through the shelf and into the end pieces. Finally, screw the shelf to the base assembly.

4 Plug all the screw holes and sand the project smooth.

5 Insert the dowel through the end pieces, and center it in the assembly. Using the earlier cut slots as guides, mark the location of the pin and wedge-key hole locations on the dowel. Remove the dowel, and drill a ¼″ hole through one end of the dowel for the pin and another ¼″ hole in the other end for the wedge key.

6 Cut the wedge key (E) to size using the full-sized drawing *below* as a guide. With a sharp ¼″ chisel, form the tapered wedge-key slot in the 1″ dowel to the shape shown in the drawing.

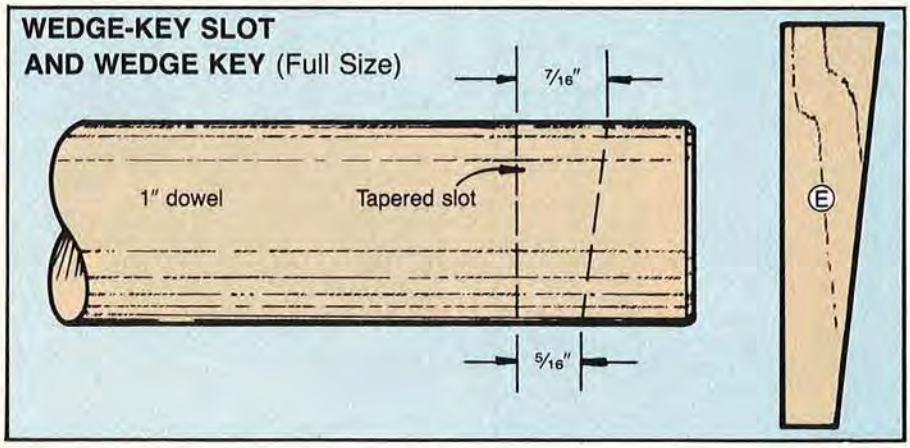
7 Cut a ¼″ dowel to 1½″ long. Center and glue it in the ¼″ pin hole in the 1″ dowel.

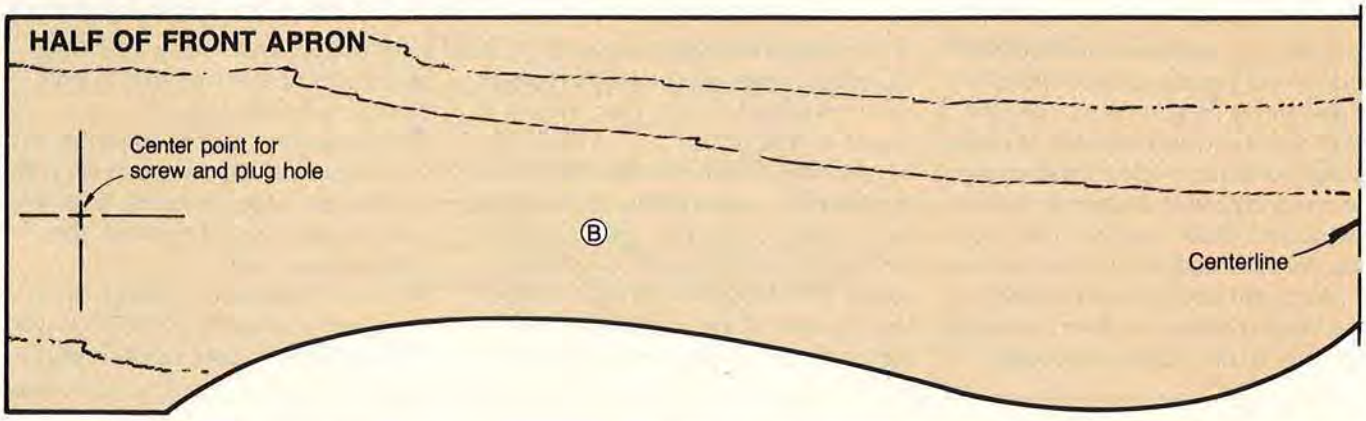
FINISHING UP

1 Remove the 1″ dowel from the holder. Finish-sand the holder, wedge key, and dowel. Stain and finish as desired.

2 Using toggle bolts (for drywall), fasten the holder to the wall.

Country-Classic Section
Produced by Marlen Kemmet
Graphic Design by Perry McFarlin
Project Design: Dave Ashe
Photographs: Jim Kascoutas; Hopkins Associates
Illustrations: Kim Downing; Jim Stevenson





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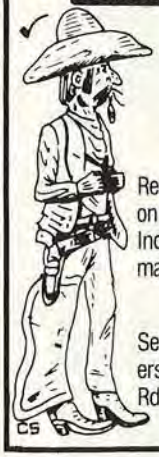

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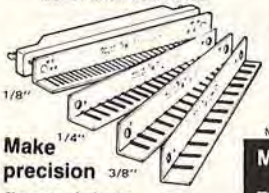

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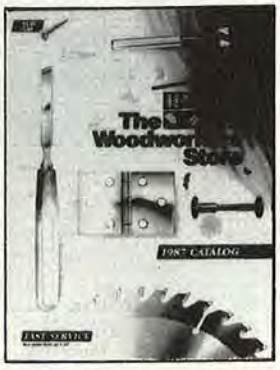

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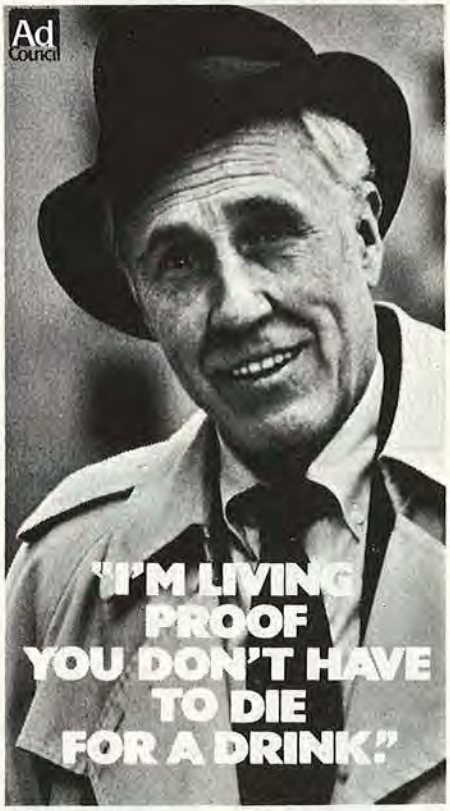

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Spice Cabinet

Continued from page 79

CUT AND ASSEMBLE THE DRAWERS

1 Cut one piece of ¾" oak to 2 15/16 x 22" for the drawer fronts (M), and two pieces of ½" oak to 2 15/16 x 35" for the sides (N). (We planed ¾" stock down to ½" thickness for the sides and backs).

2 Now, rout or cut a ¼" rabbet ¼" deep along the bottom inside edge of each of the three pieces.

3 Set a stop on your saw and cut the fronts 3 7/16" long. Reposition the stop and cut the sides to length. Cut a ½" rabbet ⅜" deep along both ends of each drawer front.

4 Cut the backs (O) and bottoms (P) to finished size.

5 Glue and clamp the drawers together checking for square. Later, remove the clamps and check the fit of all drawers in the opening. Sand if necessary.

6 To locate the drawer pulls, position all the drawers in the opening, and then draw a line across the fronts 1½" up from the bottom edge of the drawer fronts. Remove the drawers, and drill a 7/64" pilot hole for the pulls through each front through the line and centered from side to side.

ADD THE FINISHING TOUCHES

1 Remove all the hardware (except the magnetic catches — just cover them with masking tape). Then, apply stain to all the pieces, being sure to wipe on with the grain. Later, apply several coats of finish. (We applied two coats of polyurethane varnish to the case, doors, and drawer exteriors; two coats of salad bowl finish to the drawers' interiors.)

2 Glue and nail the back (H) in position. Reattach the hinges and knobs. Use the technique and photo reference on page 74 of the canister article to install the glass. Hang both doors.

BUYING GUIDE

- **Porcelain knobs.** ¾" diameter, ⅝" projection (eight needed). Catalog no. E1701, $1.10 each. The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374. Phone 612/428-2199 to order.
- **Magnetic catch.** Catalog no. D4185, 85 cents each (two needed). The Woodworkers' Store, address above.
- **Hinges.** Solid-brass ball-tip pin hinge, antique finish, loose pin. Catalog no. D1209, $2.35 per pair (two pair needed). The Woodworkers' Store, address above.
- **Glass.** Hand-blown full antique glass, ⅛ x 6 1/16 x 5 9/16", $8.50 a pair (price includes shipping and handling). The Stained Glass Store, 3617 Ingersoll Ave., Des Moines, IA 50312, or call 515/279-4855.

Project Design: Dave Ashe
Photographs: Hopkins Associates; Jim Kascoutas; Craig Anderson
Illustrations: Kim Downing; Bill Zaun

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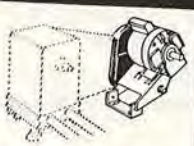

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CRAFTS FAIRS

Continued from page 63

the setup needn't be fancy, but it should be clean, neat, and show off your work at its best.

If the fair happens to be away from where you live, you'll have travel and living expenses. Staying with friends or relatives will enable you to trim these.

If you decide on a juried fair, make sure you submit professional quality slides of your work. For most of us, that means paying about $100 to a photographer (or bartering for his skills). Business cards also help add to your professionalism. Dropping one in the wrapping with a purchased piece may also result in later sales.

ADVICE FROM THE PROS

Cleat Christiansen has learned to be a photographer, businessman, traveler, salesman, and educator ("because most people don't understand what woodturning is"), to do crafts fairs.

Beginners, Cleat feels, should look to fairs where the management gives them all the help they can — in assigning space, parking, advertising, and all aspects of the show. "Find out how much they do for you, and for your sales," he advises.

Frank Garvelink suggests that first-time exhibitors try a show close to home, to see if they like it, because: "It's not for everyone."

David DiZinno knows you can "bomb out" from time to time at a crafts fair. "You have to take a little bit of rejection, a little failure. So, test the waters. Look for a fair with a good attitude, organization, and advertising."

WHERE TO FIND WHERE THE FAIRS ARE

After you've asked all the questions about which fairs might be good to attend — read, read, read.

- ***How to Sell at Arts and Crafts Shows,*** by Kathleen D. and Robert L. Schultz, 1985, Sandune Press, P.O. Box 58, Mosca, CO 81146, $10 postpaid.

- ***The Crafts Report,*** monthly, one year subscription, $16.75, from The Crafts Report Publishing Co., Inc., 700 Orange St., Wilmington, DE 19801.

- ***Profitable Crafts Marketing,*** by Brian T. Jefferson, 1986, $10.95 plus .95 postage and handling, from The Crafts Report Book Dept., P.O. Box 1992, Wilmington, DE 19899.

- ***Sunshine Artists U.S.A.,*** monthly, one year subscription, $20, from Sun Country Enterprises, Inc., 1700 Sunset Dr., Longwood, FL 32750-9697.

- Also contact state travel departments and state arts councils, care of state capitols, for listings of art and crafts fairs.

SALES TAX AND YOU

Selling your work at a crafts fair means retail sales — and sales tax. So, you'll need a state *resale tax number,* available from your state's tax department, to do business. It allows you to buy materials without paying sales tax, and requires you to collect sales tax on items you sell and forward it to the state.

If you sell retail in a state where you don't live, you'll also need to have a resale tax number from that state. And sometimes, counties require tax numbers too, because they collect taxes independently, or on top of, those collected by the state.

Most fairs make it easy for out-of-state exhibitors and send the proper forms to you when they notify you of acceptance. Sometimes, forms are available when you check in. Or, you can write to the tax department of the state where you intend to do business. Check with an accountant before you begin. Tax laws can be complex.

Photograph: Craig Anderson

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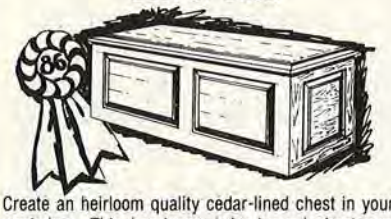

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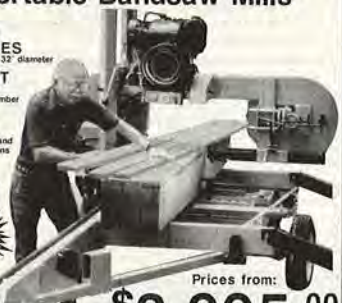

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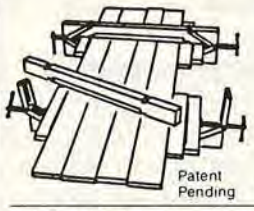

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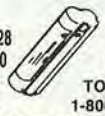

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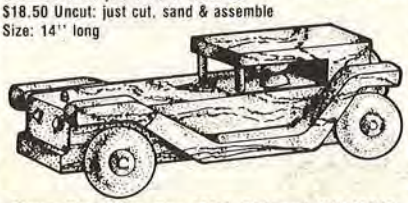

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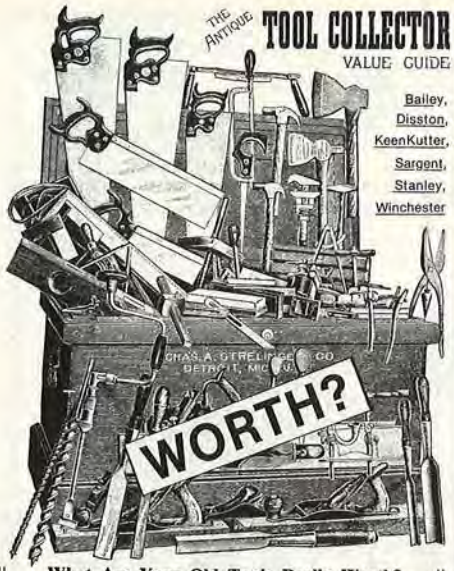

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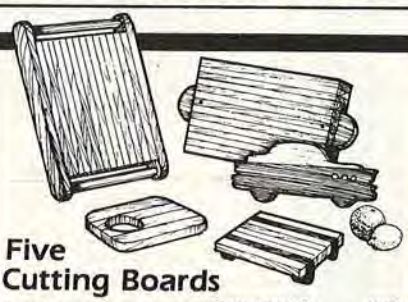

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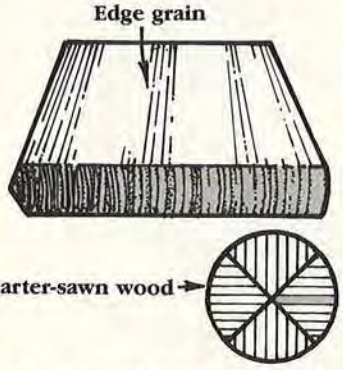
Bead: Glue applied in a line; also refers to the small bulbous mass of glue forced from a joint under clamping pressure (squeezeout). Used additionally to describe a small, round wood molding formed by a beading bit.

Bow: A warp in which the ends of a board or wooden member curve in the same direction away from the desired plane, usually along the length.

Cove: A molding or shaped piece that has a concave cross section; to make such a cut.

Edge grain: Wood characterized by the growth rings being 45 or more degrees, preferably perpendicular, to the surface of a board; the face grain produced in quarter-sawn wood.



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Continued on page 94

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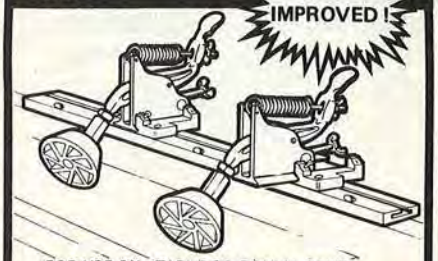

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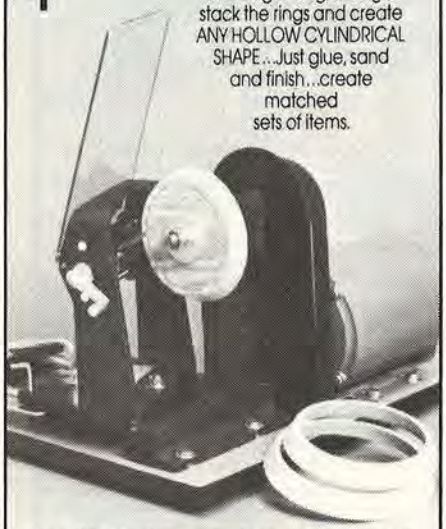

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WOOD WORDS

Continued from page 91

Forstner bit: A patented drill bit for sinking holes which do not penetrate all the way through the material. Used for holes requiring a flat bottom. The sharpened circumference decides position.

Gain: A rectangular cut across the grain in a workpiece; also called a dado.

Grain direction: The direction in which the dominating, elongated fibers or cells lie in the structure of wood.

Hone: To polish and refine a cutting edge by rubbing it against a hard, smooth stone or other surface made for that purpose.

Hammering: Vibration and noise caused by feeding a workpiece into a circular saw or dado blade too rapidly, or by using a dull blade.

Moisture content (MC): The percentage of water a piece of wood contains. Normally, kiln-dried lumber has a moisture content of 6 to 9 percent.

PEG: Polyethylene glycol, a preservative for treating green wood to prevent splitting or checking by chemically replacing the natural drying process.

Straight grain: Grain running parallel to the length of edge of a board.

Turning: The skill of using a lathe and lathe tools to produce rounded wood pieces, usually of varying thickness, such as furniture legs and bowls. Also used as a term to describe a product made on a lathe.

Warp: A general term used to describe the deviations in the shape of a board from the true or plane surface. Caused by uneven drying, warps include bows, crooks, cups, twists, or a combination of these configurations.

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1A. Title of Publication: Better Homes and Gardens Wood.
1B. Publication No. 724890.
2. Date of Filing: September 23, 1986.
3. Frequency of Issue: Bimonthly.
3A. No. of Issues Published Annually: 6.
3B. Annual Subscription Price: $18.00.
4. Complete Mailing Address of Known Office of Publication: 1716 Locust Street, Des Moines, Polk, IA 50336.
5. Complete Mailing Address of the Headquarters of General Business Offices of the Publisher: 1716 Locust Street, Des Moines, IA 50336.
6. Full Names and Complete Mailing Address of Publisher, Editor and Managing Editor: Publisher: Jerry Kaplan, 750 Third Avenue, New York, NY 10017; Editor: Larry Clayton, 1912 Grand Avenue, Des Moines, IA 50312; Managing Editor: Charles E. Sommers, 1912 Grand Avenue, Des Moines, IA 50312.
7. Owner: Meredith Corporation, 1716 Locust Street, Des Moines, IA 50336. The Names and Addresses of Stockholders Owning or Holding 1 Percent or More of the Total Amount of Stock: Cede & Company, Box 20, Bowling Green Station, New York, NY 10004; Kray & Company, One Financial Plaza, 440 South LaSalle Street, Chicago, IL 60605; Kray & Company, P.O. Box 10645, Newark, NJ 07101; Pearce & Pettit, c/o Wilmington Trust Company, P.O. Box 9746, Church Street Station, New York, NY 10249; Prop & Company, c/o Norwest Bank Des Moines, N.A., 666 Walnut Street, P.O. Box 837, Des Moines, IA 50304; The E. T. Meredith and Bohen families and family foundations own directly or beneficially, through some of the nominees listed above, approximately 31% of the issued and outstanding stock of the corporation. Each nominee holds stock for one or more stockholders.
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	Average No. Copies Each Issue During Preceding 12 Months	*Actual No. Copies of Single Issue Published Nearest to Filing Date*
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B. Paid and/or Requested Circulation 1. Sales Through Dealers and Carriers, Street Vendors and Counter Sales	75,667	90,000
2. Mail Subscriptions *(Paid and/or requested)*	315,279	308,980
C. Total Paid and/or Requested Circulation *(Sum of 10B1 and 10B2)*	390,946	398,980
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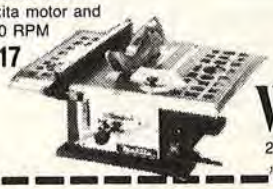

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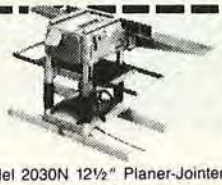

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DIVIDING A BOARD INTO EQUAL PARTS THE EASY WAY

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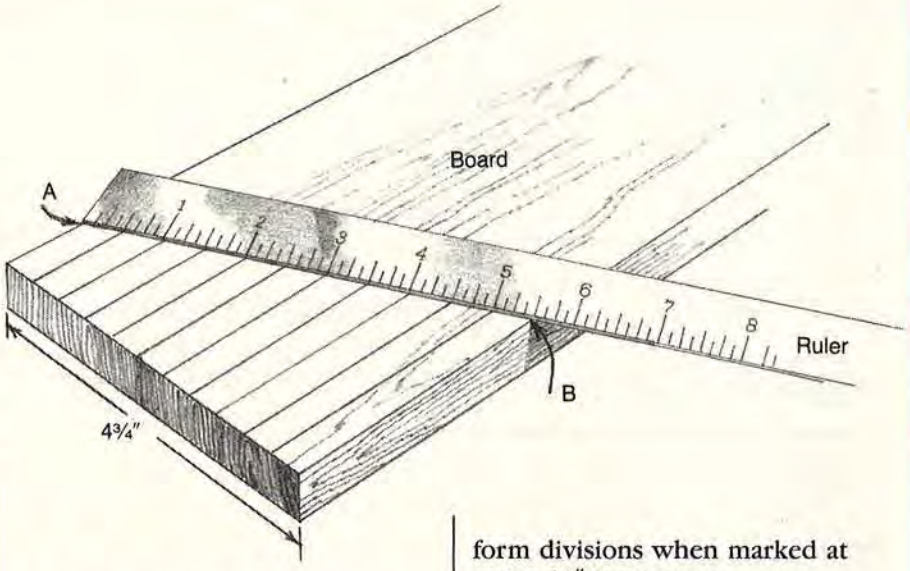

Imagine you have a 4¾"-wide board you want to make into 11 equal parts. Instead of relying on long division, follow this method (illustrated *right*).

1 Lay a ruler across the board width at a diagonal to form *AB.*

2 Keeping one end of the ruler in place at *A*, adjust the other end slightly up or down until the ruler at *B,* lines up with a number that can easily be divided by the number of parts you need. In this case, the 5½" mark lined up at the right edge of the board provides 11 uniform divisions when marked at every ½" increment.

3 Place a dot at each ½" division.

4 Use a square and mark the division lines perpendicular to the end of the board.

Illustration: Jim Stevenson

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1. Horton Brasses' catalog shows over 500 items of authentic reproduction hardware from the 1700s and on into this century. These are superior reproductions of Chippendale, Hepplewhite, Queen Anne, Sheraton, Victorian and early 1900s brass furniture hardware. Catalog $2.00.

2. Toy Designs' catalog of wooden toy patterns, hardwood turnings, complete kits; also patterns plus turnings kits and woodworking books. Seven full-sized patterns $5 each; four or more for only $4 each. Package of eight spoked wheels $5.95. Catalog free with order. Catalog alone $1.50.

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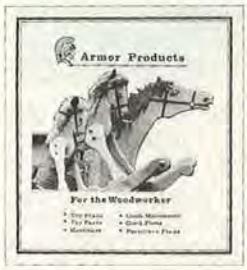
3. W.S. Jenks & Son's new 150-page sourcebook is packed with a full range of tools for the serious woodworker, from hand tools and portable power tools to woodworking machinery. Includes many imported and hard-to-find tools from the best manufacturers at the most competitive prices. $2.00 (refundable with first order).

Woodmaster

4. The two-speed Liberty 18 Scroll Saw from Woodmaster outperforms even the most expensive imported saws! Anti-friction worktable, ¼ HP two-speed motor, integral stand, dust blower and many more standard features make this your best scroll saw buy! Send for free information kit today!

5. Cherry Tree Toys' color catalog is chock-full of plans, parts, kits and supplies for whirligigs, toys, doll houses, swing sets, classic autos, furniture and crafts. Also parts (toys, craft, game and furniture) in maple, oak, walnut and cherry. Bulk prices available. Catalog subscription $1.00.



6. If you are making toys and other items for craft shows and flea markets, don't overlook our great selection of patterns for rocking horses, pull toys, cars, clocks and furniture. Specialty supplies also available. Armor Products catalog $1.00.

IPM

7. Quartz clock movements. Our 60-page, full-color catalog features a large selection of movements and a full line of clock-making supplies and accessories. Thousands of ultra-thin pendulum and chime movements always in stock. Most orders shipped within 48 hours. Catalog Free.

8. This woodworkers catalog is more than a catalog—it's one of the best sources for quality woodworking tools. You'll find everything from bit braces to wood borers, from saws to sharpening stones. Every product is sold satisfaction guaranteed. Free. Woodcraft Supply Corp.

THE SOURCE

9. Cabinetmakers' tools and supplies. New 224-page catalog of fine hand and power tools for cabinet makers or serious woodworkers. Also featured are three sections on hardware, supplies and cutting tools. This catalog takes the mystery out of using European hardware. A must reference for the woodworker. $3.00.

10. Moisture-related problems, such as shrinking, warping and cracking, can ruin the most beautiful wooden pieces ever built. Avoid wood moisture problems by checking the wood with a moisture meter! The pocket-size Mini-Ligno moisture meter is for the serious hobbyist and professional woodworker. Free brochure.

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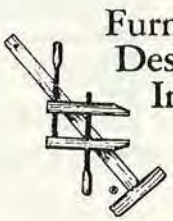
11. 24-page color catalog from the Xylophile's Company is full of tool bargains from Ryobi, Powermatic, Hitachi, Makita, Minimax, Freud and many others. Everything for your shop. Professional quality at down-to-earth prices plus the fast, courteous service you demand. $1.00.

12. R.A. Ness & Co., The Woodworkers Emporium, offers a two-year, eight-issue catalog subscription. Thousands of industrial quality items—machinery, hand tools, portable electric tools and supplies featured at super sale prices. Fee refundable with purchase. $4.00.



13. Wonderland for woodworkers! Illustrations and descriptions of over 180 full-size plans of fine, museum-quality furniture. Includes cradles, roll-top desk, tables, chairs, buffets, chests, gun cabinets, poker table, children's furniture, rocking horse, spinning wheels and more. Catalog $2.00-refundable with first plan order.

14. Tool catalog. Available from Elektra Beckum U.S.A. Corp. are advanced technology woodworking stationary power machines with the unique Unimex Motor interchangeable concept. For complete information on Jointer/Planer, Bandsaw, Dust Extractor, Spindle/Moulder, Lathe and Combi Saw send for our catalog. $1.00.

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17. Constantine's 175th Anniversary Catalog for woodworkers offers 116 pages of 150 kinds of veneers, 250 sizes of cabinet grade hardwoods, specialty woodworking tools and accessories. Hard-to-find hardware, inlays, mouldings, cane, wood finishes, plans and books. The best source for woodworkers and restorers. Satisfaction guaranteed. $1.00.

18. Grizzly Imports, Inc. is a unique mail-order company because it specializes in selling heavy-duty woodworking machinery and accessories that are of high quality. The low prices are surprising and often enable a craftsman to equip a complete shop for a fraction of the cost of locally made tools. Catalog $1.00.

19. Discover the world's oldest hobby! Build fine quality wooden ship models from easy-to-assemble kits. Described are true-to-scale replicas with gleaming brass fittings, exotic woods and delicate rigging, which are lifelike in every detail. A 64-page color catalog from Model Expo. $3.00 (refunded with first order).

20. Woodworker's supplies catalog! Hundreds of handtools, patterns, veneers, hardwoods, turning and carving stock, wood parts, books, cane, hardwood dowels, supplies, edgings, custom veneer faces. Many major brands. Save 20% on Freud! 56-piece woodworkers' kit only 17¢! Hurry! Send $1.00 for catalog today!

21. DML's line of professional, industrial-quality saws is detailed in a 12-page catalog. Covered are tungsten-carbide-tipped rip, cutoff, trim, plywood, plastic, panel, miter, planer, non-ferrous and general-purpose combination saws, industrial dado sets, miter-box saws and DML's new Radi-All combination-grind saw. Part numbers, diameters, bores, tooth numbers and plate/kerf measurements are included. $1.00.

22. 212-page 1987 Garrett Wade catalog features more than 2,500 items accompanied by valuable reference material on proper tool usage. This premium line of products includes hand tools, finishing supplies, clamps, shop accessories, woodworking books and Japanese tools. Power tools include INCA Swiss woodworking machinery and German lathes. $4.00.

23. Kuster Woodworkers' catalog features affordable, quality products: UltraSand™ Heavy Duty Thickness Sanders; DynaSand™ Thickness Sander Kits; SandAid™ Abrasive Belt & Sleeve Press for making your own sander belts and sleeves; quality hand tools; abrasives and supplies. Several exciting new products will debut in 1987, so get on our mailing list today.

24. Classic Hardware Catalog is a design guide for craftsmen. Forty full-color pages of the finest imported and domestic brass furniture hardware. Wide selection of standard and specialty hinges including piano, butler's tray, rule joint, rat-tail and European cabinet hinges. Every item shown full size enabling you to see how your project will look when finished. $1.00.

25. Full-color 64-page catalog carries the finest tools for the serious woodworker, including Western and Japanese hand tools, finishing supplies and portable power tools by AEG and Ryobi. Also, unique items such as workbenches made of African teak, small-scale tools for the miniaturist, handmade turn-of-the-century tools and inflatable drum sanders for portable power tools. Rent a how-to video for $10 a month. Fine Tool Shops Catalog Free.

29. Freud, manufacturer of the finest in hand tools and carbide tools, makes these two catalogs available to you. They feature a large selection of quality chisels, carving tools, turning tools, planes, as well as carbide saw blades, router bits and shaper heads. Send for your catalogs today. $5.00.

33. Miniature Antique Transport Plan Catalog. Criss-Cross Creations' newest catalog features vehicle plans designed for the serious scale woodworker. 1849 Concord Coach can be built in 1" scale using our full-size cutting patterns, photos, exploded assembly and instructions. Many other vehicles available. Catalog brochure $1.00.

26. Meisel Hardware Specialties' all new 48-page catalog is *the* source for hard-to-find woodworkers' specialty hardware and project plans. Included are new toy truck plans, doll furniture plans and new country projects. Toy makers' parts include regular wood wheels, wood truck tires with treads, wood wheels with rubber tires and many decals for toy trucks and airplanes. Other items include stenciling supplies, jewelry box hardware, Shaker pegs, antique toy restoration parts and plans for homemade power disc sanders. Many prices are discounted 40%. $1.00.

ZAC

30. Square it™ is a newly patented electronic precision square with a guaranteed accuracy of 5/10,000 of an inch; preset at exactly 90° and 45°. Introductory special of Square it™ complete with 18-page manual and warranty. The 37-page DOOR SHOP™ MANUAL covers the complete process of door building; the most comprehensive manual out today. Get the Square it and Door Shop Manuals both for $6.50.

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34. Over 200 router bits and shape cutters displayed in catalog featuring six-piece cabinet sets, three-piece ½ in. shank router bit panel raising system and three-wing industrial shaper cutters. Shaper cutters available in ½ in. through 1-¼ in. bore with bushings. Router bits offered in ¼ in. and ½ in. shank. Catalog $1.00.

27. Patterns by Design Group. Hundreds of interesting, useful and fun items to create for personal use or profitable sale. Our 1987 catalog contains plans for toys, games, plaques, puzzles, bird houses, planters, furniture and much, much more! All Design Group patterns are professional, "same-size" blueprints. No enlarging or reducing is necessary. Simply trace outline of item onto wood and create! Full money-back guarantee. Wholesale and bulk prices available on request. Fully illustrated catalog $1.00.

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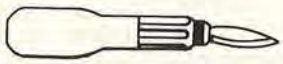

31. Warren Tool Company's Wood-carver's Catalog features the finest quality whittling and carving hand and power tools, books, sharpening stones, wood and supplies. Warren Tool has become a common name in the wood carving world because we take pride in selling only the finest professional tools. Remember our motto: "Warren Tools give you the edge." Send $.60 for catalog #5.

Wyndham Woods

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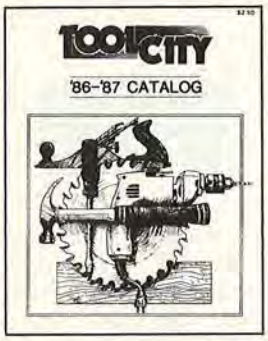

32. Tool City catalog is 408 pages; the most complete mail order tool catalog. Priced to save you money in all categories. All types of power and hand tools at discount prices. $2.50.

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37. Power tools for woodworkers. Plans and kits of metal parts to build your own band saw, sander, wood shaper, circular saw, lathe/drill press. Use our easy-to-follow plans or design your own tool with our parts and accessories. Brochure and complete information $1.00. Kits priced from $34.99 to $189.99.

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HILLER HARDWARE Co.
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39. The 1987 Hiller Hardware Catalog is a comprehensive collection of tools and accessories for you. Select from the best quality tools in the business at a price only a volume supplier can provide. Power tools, hand tools, cutters, blades and accessories. 24 pages, over 240 tools! $1.00.

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42. If you own a router, send for our free information kit on router bits. Large discounts. High quality router bits and the Merle Adjustable Corner Clamp are our only business. All bits are two flute with thick tungsten carbide tips and have ½" ball bearing pilots. Prices up to 50%-70% lower than elsewhere. Value, quality and prompt service guaranteed! Free.

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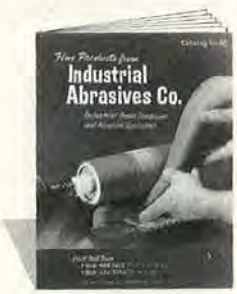
45. Advance Machinery Imports, Ltd. Complete data on AMI's primary products: Hegner precision saws and Hegner wood lathes and duplicators. Reference data, photos, specifications, prices and ordering information. Also, complete details on AMI premium scroll saw blades with coupon for FREE saw blades worth $4.00. Send $2.00.

HAMMERMARK ASSOCIATES

46. Hammermark Associates' 16-page furniture plan catalog features 24 furniture plans. We currently offer two different types of plans. Our WEEKEND WORKSHOP SERIES offers quick projects that can be completed in a weekend or two. Our CLASSIC SERIES consists of projects that take a little longer to produce. These antique reproductions are likely to become family heirlooms. Catalog $1.00 (deducted from first order).



47. Buy your sanding belts direct from the manufacturer and save! Yes, Industrial Abrasives is the company that gives you six free belts with every dozen ordered. *But,* sanding belts are not the only product we have to offer. In our catalog you will find many sanding related items not readily available in your hardware store. $1.00 (refundable with order).

48. The new Acme Electric catalog of Delta Woodworking tools is now available and full of specials including items from our all new lumber company. Most orders shipped same day, freight included. Factory-authorized service. $1.00.

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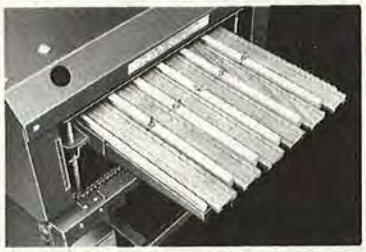

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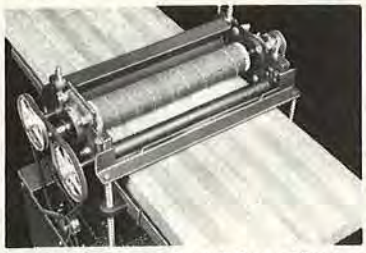

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51. RBIndustries features a full line of Woodplaners and Hawk Precision Scroll Saws proudly made in America by American craftsmen. Patented quick-change planer allows faster and easier set-up for sanding, molding or planing at a surprisingly low price. Catalog $1.00.

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6900Dbv	0-2500 rpm Screwdr	144	79
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8419B2W	3/4" Hmr Drill/case	268	145
9030	1" Belt Sander	208	125
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4010-10	Palm Sander	58	39
6513-09	1/2" Elect. Imp. Wr	179	109

RYOBI
MOD # TS251U
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Ryobi Tools $159

AP10	Planer	699	345
E3800	0-4000rpmDrywall	129	79
E3810	0-2500 Drywall Dr.	129	79
RJ100V	Var Spd Recipro Saw	199	99
S500A	Block Sander	59	29.95
SP180	Sander/Polisher	184	109
TR30	Laminate Trimmer	134	65
TS251U	10" Miter Saw	359	159
TS380	14" Miter Saw	629	319
W200S	16 1/4" Beam Saw	529	279

16¾"
14¼
AP10
RYOBI
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N16CT	Framing 50-100	695	417
N80S	same as above	695	417
N70S	LI Framing	545	327
T30-50	1/2" crown stapler	470	282
T35-6	1/2" crown stapler w/shingle gauge	370	222
T35-16	3d-8d T-Nailer	495	297
T35-40	Brad Nailer 1"-1 3/4"	470	282
T29-1	Brad Nailer 5/8"-1"	225	159
T31-1	same as above	169	119
T28-5	3/32" crown stapler	370	222

PREPAID FREIGHT TO 48 STATES ANY ITEM THIS PAGE

Senco Nailguns

LS II	5/8-1" Pinner	290	246.50
LS IV	5/8-1-1/4" Pinner	293	249.05
SFN I	1-1 3/4" Finish	302	249.05
SFN II	1 1/2-2 1/2" Finish	476	385.05
SKS	1/4" Crown Stapler	279	237.15
SN IV	2-3" Framing Nailer	578	491.30

Bosch Power Tools

1272	3x24" Belt Sander	259	165
1581VS	Jig Saw Orb. Action	230	124
1601	1Hp Router	149	89
1604	1 3/4 Hp. Router	209	115
1921var	Cordless Drill 3/8"	189	99
90-300	3 1/4 HP Router	500	350
1942	Heat Gun	99	59
3230	Jig Saw	85	49

BOSCH. Top Handle, Orbital Action Jig Saw Model 1581VS

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35-623	10"x80T ATB	116.00	69
35-677	14"x106T ATB	158.85	89
35-647	12"x72T ATB	145.10	79
35-626	10"x60T ATB	83.65	49
35-560	8" Carb Dado Set	190.00	99

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0234-1	1/2" VSR Drill	173	109
0566-1	Drain Cleaner	271	173
1007-1	1/2" Drill SC	217	148
1250-1	1/2" Drill	217	148
1610-1	1/2" Spade Hndl Drill	206	132
1630-1	1/2" Compact Drill	217	148
1670-1	1/2" Hole Hawg	300	189
3002-1	Rt angl Electricians Drill	276	175
3107-1	Rt angl Drill Kit	298	204
3300-1	Rt ang Magnum Dri	271	169
5347	1½" Rotary Hmr	595	309
5399	1/2" Hammer Drill	284	179
5455	7" Polisher	199	136
6012	Orbital Sander	173	110
6095	9" Sander/Grinder	227	104
6215	Chain Saw	209	143
6377	7 1/4" worm Drive Saw	278	143
6511	2 Spd Sawzall, case	197	110
6539	Cordless Screwdriver	98	69
6543-1	0-1000 rpm Screwdriver	217	149

Hitachi Power Tools

D10V	3/8" VSR Drill	139	69
D13	1/2" Spade Hndl Drill	198	99
DRC10	3/8" Cordl Scrudrill	159	74
F20A	3 1/4" Planer	153	69
TR5	Laminate Trimmer	148	83
TR12	3HP Router	321	169
C7SA	7 1/4" Circular Saw	119	65
W6VA	0-2500 Screwdriver	133	79
CR10V	Var Spd Recipro Saw	224	107

DRC-10
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500	Auto Scroll Jig Saw	99	49
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551	5 1/2" Circular Saw	99	72
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SOUND ADVICE

OTHER WAYS TO $ELL YOUR WORK: 3 OPTIONS TO CRAFT FAIRS

Crafts fairs rate as a favorite way for many woodworkers to sell what they make (see article on page 62). But what if you're not cut out to man a booth eight hours a day talking to complete strangers? If you would rather trade sales pitches for shop time, you have other avenues to market your work.

ONE-ON-ONE WITH COMMISSION SALES

Commission, or special-order, may be the most convenient way to get started selling your work. Essentially, you build a project or make an item to specifications requested by the customer, with the price agreed on at the time you take the order.

By selling through commission, you stay at home in your shop, have minimal selling expenses, don't have to invest in lots of lumber, or stock a large inventory of finished pieces.

However, commission sales classify as retail selling, so you'll have to have a state retail tax number (see page 87) and collect taxes for the state.

Usually applicable to furniture and cabinets, commission selling requires that you have an agreement with the customer as to what the finished project will look like. You can make that clear with sketches or photos of similar pieces, and with written descriptions and specifications. You should know fairly accurately how much time you'll put into the project to arrive at a price.

Request down payments to cover materials and some of your time. It commits your client to purchase the completed piece.

WHOLESALING FOCUSES ON PRODUCTION

When you do most of the work and the retailer marks up your product 100 percent (typically), it seems like you don't get much of the gravy. But, when you add up the time you'd have to spend, and the money, to retail your offerings in quantity, wholesale selling becomes more sensible.

Wholesaling also enables you to move lots of your handmade merchandise to a variety of outlets — retail stores, gift shops, and gift catalog companies — to name a few. And after you've delivered the order and have been paid, your worries are over. But to wholesale successfully, you'll have to brush up on your business savvy regarding purchase orders, credit, returns, fulfillment, and shipping. Products that you can make quickly in quantity probably adapt best to wholesale.

Print this article

SHARE WORK AND PROFIT WITH CONSIGNMENT

Compared to wholesaling, with consignment you realize a higher portion of your product's final selling price — usually 60-80 percent, depending on the shop. But because the shop assumes the selling overhead, responsibility for moving your merchandise, and collection of any sales tax, you don't get paid until after your work has been sold. You trade delayed payment for their investment in the business.

Even the IRS considers the products you have out on consignment yours until they're sold. So, you do have some responsibilities. You must keep track of how *much* of your work is *where*. You're also expected to pick up old merchandise that didn't sell and deliver new. That's why it makes sense to consign your work only to shops within a reasonable travel distance.

Written agreements for consignment sales (the law in some states) protect you and your work from loss. They should also cover time intervals for payments to you for merchandise sold, and how often you have to replenish the store's stock. Some consignment outlets, especially galleries, may limit you as to where else you can sell your work and how much you can sell it for. These restrictions should always be made clear in the contract.

Consignment selling works for most handcrafted items, but it's extra-appealing if you make higher priced furniture, case goods, or unique, one-of-a-kind creations too fragile or expensive to ship very far.

BEFORE YOU SELL, SEE AN ACCOUNTANT

No matter how you sell, you're in business, and a different set of tax rules apply. Different ways of selling might even require different accounting methods. So, consult a professional tax accountant.

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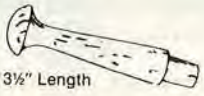

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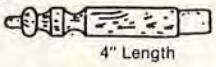

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WOODWORKING FACTS, FACES, & FABLES

The Bulletin Board

WOOD TO WET YOUR WHISTLE

Pioneer woodsmen on the American frontier used the inner bark of the slippery elm to quench their thirst when no water was handy. They peeled it from the tree and chewed it like gum.

HARDWOODS CAN BE HOT STUFF

Wherever hardwoods grow in plentiful supply, people who rely on wood heat value them as much for fuel as woodworking stock. When the weather turns brisk, BTUs become more important than board feet. (One British Thermal Unit, or BTU, equals the amount of energy needed to raise the temperature of a pound of water one degree Fahrenheit.) And some favorite hardwoods for woodworking rank as super fuel.

Measured in millions of BTUs per cord, here's how some of these favorites stack up:

HARDWOOD (One Cord)	BTUs (Millions)
Hickory	31
White oak, pecan	28
Red oak, hard maple	27
Ash	25
Elm, sycamore	21
Yellow poplar	18
Aspen, basswood	16

Except for ponderosa pine, which rates a relatively high 22, softwoods average about 16.

TALK ABOUT A TURNING!

For Des Moines-based architectural woodturner Mark Knudsen, who routinely turns large items such as posts and columns for buildings, it was the biggest bowl ever mounted on his lathe. Built up of Honduras mahogany segments band-sawn to rough shape, the "blank" measured 54″ in diameter, was nearly 3′ deep, and weighed 550 lbs. Not surprisingly, he needed a chain hoist to lift it in place on the faceplate!

Thirty hours later, over 300 lbs. of mahogany shavings lay on Mark's workshop floor. The newly turned bowl was 29″ deep, with 1⅝″-thick sides.

Mark's turning work was finished, but there was still more to do with the huge, mahogany bowl. It was freighted to a St. Petersburg, Fla. hotel, where a cabinetmaker halved it like a melon and used the curved pieces to top a pair of china cabinets in the refurbished grand banquet room.

Reflecting on his experience, Mark says he had only two problems: "The sides of the bowl actually moved in and out — kind of flapped — as I was turning it. That made it difficult to keep my gouge against the wood. And, because I had to slow the lathe down to 65 rpm's, the shavings didn't follow the bowl around and drop out the bottom when I was working inside — they got to the top, then rained down on my head!"

Mark Knudsen uses a ⅜″, long-handled gouge to shear away mahogany from the largest bowl he has ever turned in his shop — 54″ in diameter!

Photograph: Marlen Kemmet

THE WOODWRIGHT'S SHOP — CONTINUED

Colonial Williamsburg's master housewright, Roy Underhill, whose "Old Hand Ways" articles often appear in these pages, continues romancing us with stories about the skills of yesteryear. If you enjoy Roy's articles, we suggest you check your local program guide for his new PBS television series called "The Woodwright's Shop." Much of the new version's content comes from Roy's recently released, third book, *The Woodwright's Workbook*, published by the University of North Carolina Press.

IT ALL ADDS UP

The value of a red oak tree increases about 37 times from when it's bought on the stump for commercial use to when it's sold retail as furniture.

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